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MUST THERE BE A REVOLUTION IN MEDICAL PRACTICE?[1]

By ALAN E. LEE,
Brisbane.

THAT a Branch of the British Medical Association should devote three consecutive monthly meetings to a discussion on the future of medical practice is good evidence that some changes are expected, or feared. This is indeed so. In the various Branch councils constant attention has been focused for years past on the probable nature of such changes, and these present meetings are designed not only to obtain an expression of opinion by the Branch members, but also to remove any grounds for the criticism sometimes voiced that the ordinary member is not consulted about such matters.

This is not only an Australian problem. The most cursory glance at medical journals published in Great Britain and the United States of America will show that a most active interest exists in those countries also as to the nature of the future practice of medicine in those lands.

For years past, with increasing tempo, has been heard the mutter of an approaching storm that threatens to sweep away the organization of medical practice as we know it today. Of plans and of prophets we hear much; but amongst the clatter of pens and tongues one fundamental question rarely emerges, and that is this: "Why must there be any change from our present basis of practice?" Before you and I submit ourselves to a new system we should have a clear and unequivocal answer to this question, and this I propose to discuss first tonight.

[1] Read at a meeting of the Queensland Branch of the British Medical Association on April 18, 1942.

As I see it, the whole basis of medical care can be brought under three headings: (i) political, (ii) financial, (iii) technical. I would stress further that these three aspects are separate and not necessarily confluent concepts. So let us consider them one by one.

Political Considerations.

If one fundamental fact emerges from an historical study of the basis of medical practice, it is this: that it adjusts itself to the political complexion of its environment. Wherever we look, whether back into past centuries, to Russia of the present, or the United States of the immediate past, we see that the organization of medical practice runs parallel with the general type of community organization. Where society is individualistic and competitive, so is medicine; where it assumes a collectivist basis, so does medicine. Now our Australian practice of medicine has been based on an individualistic and competitive society, diluted in recent years by new views of the duty of the State in certain prophylactic spheres.

As I see it, the political prophets of change base their beliefs on the expectation that the community organization of the post-war period will be on a socialistic and collectivist basis. If this proves to be the case, our present practice of medicine will be an affront to the general pattern of society and must assuredly change. But it is not certain that present socializing trends will continue; a reaction may occur, when a collectivist organization of medicine will be equally unacceptable. The lesson that this teaches is surely clear. Medicine must be prepared to adapt its organization to whatever may be the future political complexion of the community; but it must resist attempts to anticipate such a change.

On political grounds, then, we should resist a revolutionary change from our present basis, unless or until its continuation will constitute an affront to the general social constitution. Clearly this stage is not now present, nor likely to eventuate in the immediate future.

Financial Considerations.

Though it is mostly from people with narrow, short-range views, there is much sniping, within and without the profession, at the financial basis of present-day practice. The following arguments for change are adduced: (i) that the cost of medical care has become so great as to be beyond the reach of great sections of the public; (ii) that it is becoming increasingly difficult for medical men to make a living while medical practice is on its present financial basis.

Now what substance is there in the first argument as applied to Queensland? Precious little, as I shall show you. From the financial viewpoint the population can be grouped into two classes, not occupying water-tight compartments, but according to circumstances flowing from one to the other. The patient in Class I makes an individual contract with his doctor, paying for professional care on a basis of an adequate fee per service rendered. The patient in Class II accepts a concessional service, either by contracts under friendly society control or through the medium of the public—that is, State-subsidized hospitals. Many of the population must always belong to Class II, some can always stay in Class I. There is a large residue which belongs to one or the other according to circumstance. It is certainly true that there are many patients who sometimes or even usually consult a doctor on a fee-per-service basis, and yet in other circumstances cannot afford such a method of financing illness; but this does not debar them from medical care. Some concessional service is readily available, and I challenge anyone to show that in Queensland any person is debarred from obtaining adequate medical attention because of a financial barrier.

From the public's viewpoint, therefore, on purely financial grounds, there is no necessity for an insurance system of payment, or for a free State medical service, or for any other revolutionary change from the present financial basis of practice.

With regard to the second argument, we sometimes hear the complaint that it is becoming increasingly difficult for medical men to make a living with medical practice on its present financial basis.

Actually, looked at from a long-term point of view, this statement has considerable basis in fact, as I shall show later. But the argument generally advanced is quite a shallow one, which reduced to fundamentals is this: that the acceptance by patients of a concessional (or Class II) service is so increasing that a fixed number of practitioners serving Class I (a diminishing group) find their incomes decreasing. Of course they do. But the remedy is obvious; it needs no radical change in practice to correct the situation, and under our present organization this remedy can be seen constantly in action. When Class I diminishes at the expense of Class II, those practitioners finding it increasingly difficult to subsist in Class I must look, in whole or in part, to Class II for a living. The substantial transfers from general practice to salaried service under the State, the Repatriation Department, or the hospitals illustrate this process. The change from an honorary to a part-time paid hospital service embodies the same principle. At times like the present, when Class I is again large, a retransfer of medical men would in normal circumstances undoubtedly occur. So the position is still such that in some form of practice reputable doctors can obtain an adequate income.

But there is a long-term view that is not so well appreciated. I am of opinion that for many years to come a process that is already obvious will cause a continued reduction in the gross income received by the medical profession on a fee-for-service basis, apart altogether from any numerical decrease in such patients. Amongst the reasons for this falling income are the following: (*a*) a diminution in the available national income; (*b*) the increasing success of preventive medicine; (*c*) advances in medical science, which are producing simpler and more effective methods of healing; (*d*) the passing of the phase during which rapidly expanding knowledge had outstripped the general educational standards of the profession and diagnostic uncertainty made much negative investigation justifiable and even necessary; (*e*) the gradual reception within the general medical profession of medical knowledge that was the previous perquisite of specialists, which is ending an era of excessive fees; X-ray examination and endoscopic methods are examples of this trend; (*f*) The large income that formerly accrued to the medical profession, because of inadequate medical education and lack of professional discipline, as a result of what would now be regarded as unnecessary surgery. Now this seems to me one of the real fundamentals that will mould the shape of future medical practice.

For the reasons outlined a fee-for-service basis will support a diminishing proportion of the practising medical profession. A time may come when concessional services cannot support the remainder, and I can envisage some future time when either the numbers within the profession must diminish or the profession may have to ask for (not accept) a change in the financial basis of practice. But if this does come in this way, it will be a rational evolutionary change, not an untested revolution from our present methods.

And finally, before I leave the financial aspect, we must consider the validity of the gibes so constantly made at the fee-for-service basis of medical practice. Backwards from Bernard Shaw, a long line of satirists have suggested that the doctor is paid for keeping the patient ill, that he manufactures illness for his own financial ends *et cetera*. That occasional doctors have done all the things suggested is undoubted; but against such persons disciplinary tools are being increasingly forged within and without the medical profession. For the great remainder it is, I think, axiomatic that no single factor maintains so firmly the respect of the public for the medical profession as the fact that, irrespective of the financial consequences, its members maintain the most unswerving ethical and moral discipline respecting this fee-for-service principle. Those who would abolish it should count first its advantages. It cements the intimacy of the individual contract between the patient and the doctor; it deters careless and slipshod work by the doctor, whilst equally deterring unnecessary and vexatious calls by the patient; but principally it maintains the gain stimulus in medicine.

The protagonists of a salaried medical service stress constantly that it is not the method of payment but the individual that counts. The good man, they say, works well under any system, the poor man under none. This is all very well in theory, but looked at in practice it is not such a happy state of affairs. Within our own experience we see the individual lowering of efficiency within the army medical services; we have watched salaried administrators fail to achieve in years reforms that keen private practitioners would complete in as many weeks; we have the assurance of experienced politicians that the Government touch produces mediocrity. But perhaps more significantly still, we observe the recrudescence of the gain stimulus in Russia after two decades of its submergence.

Listen to this extract from a report published as recently as September, 1941:

> Professional men usually are associated with a State office or institution, and work on a salary basis, but at the same time they derive a substantial additional income from the private practice of their profession.
>
> The latest income tax law of 1940 provides a good illustration of the great difference in incomes in the Soviet Union. Exempt from tax are incomes below 30s. per week. But physicians, lawyers, teachers, engineers, the law declares, have to pay 20% on the first £1,000 of income, and 38% on the excess over that amount. Writers and artists are taxed on a scale progressing from a rate of 8% below £100 to 29% on £15,000 per year, plus 50% on anything in excess.[1]

The remarkable development in Russia of the cooperative in place of the collectivist farm is a further indication of the recrudescence of the gain instinct. Surely no change that involves the abolition of this stimulus is to be undertaken lightly.

I hope you will agree that this review of the financial aspect of present-day practice indicates no necessity for any radical change in the financial basis of medicine, but rather the reverse.

Technical Considerations.

Finally, then, we must consider the technical aspects of present-day practice. If there are no political and no financial reasons demanding a change, are there any stronger technical reasons? In other words, would a system other than the present one produce a more effective care of the health of the people?

Many say "yes", and their arguments as I understand them may be considered as follows.

1. There can be no real separation between preventive and curative medicine, and since by common consent preventive medicine is regarded as a function of the State, so must curative medicine pass to the State. How much truth is there in this? There is no doubt that preventive medicine is now a matter for specialists, and it is recognized as such in the Queensland Register of Specialists. Under whatever scheme the practising medical profession may find itself, the preventive side of medicine will still be controlled by these same salaried specialists.

If, then, there is a necessity for these men to bring themselves into closer touch with the practising medical profession, why are they likely to function more efficiently under a general salaried service? They have already the time and the opportunity to effect such a liaison. Yet were we conducting a medical "quiz", we might well ask these questions: (*a*) Who is the officer (under the Director-General of Health and Medical Services) who controls preventive health activities in Queensland? (*b*) Who has met him in a professional relationship? And as a supremely difficult poser: (*c*) Detail some of his recent activities in preventive medicine.

This argument is altogether too weak, and it founders on this fundamental fact, that for many years to come, whatever form of service operates, the personnel will not change materially from those at present practising medicine. Whether a change from a fee-for-service system to a salaried service will increase or diminish the efficiency of curative medicine may be problematical; but that the already salaried preventive service will improve seems quite improbable.

If an improvement is wanted in the preventive aspects of medicine, or in its relationship to the practising members of the profession, it must come not by a change in the system of curative medicine, but by a change in the personnel of the preventive services.

2. It is often stated that curative medicine has become so complex that the era of the general practitioner is past. Limitation of practice and especially the coordination of these practitioner specialists into an integrated team are becoming essential, and it is alleged that only by a revolutionary change in the control of medical practice can such cooperation and such integration be obtained.

Certainly cooperative practice is becoming more essential, and the public hospitals are indicated as examples of such group practice. But are these where it can be seen in its most perfected form? Compared with the pallid mediocrity of hospital out-patient departments, the organization of the great private group clinics in America stands as the quintessence of medical wisdom. And what are the factors that have brought such group clinics into being, so that patients flock to them from the far ends of the earth? They are these: (*a*) individualism, with its freedom from State control; (*b*) the gain motive of private practice; (*c*) competition.

The medical profession wants, and the public wants, cooperative practice here, but not as one great soulless salaried service anchored to the mediocrity inherent in government control; rather as a few well-organized, efficient, competing, private group practices, striving to excel, not to satisfy some district commissioner, but to keep and increase their clientele and so maintain the professional and financial status of the group.

There is everything to be said for the organization of group practice within the scaffolding of our present system, and it is largely by the success that we, as members of a free profession, can attain in this matter that we shall stand or fall in the years to come. We have the organizers within our ranks, and few of us fail to appreciate the virtues of such cooperative effort. Let us get on with it, and with our success we can laugh at the bogy of State control. Freed from the dead drag of the expensive hierarchy of salaried State controllers, we shall be unfortunate indeed if we fail to develop cooperative groups whose efficiency will far transcend the poor mediocrity of the hospital out-patient system, the goal of State control.

Have the members of the public any further complaints about the technical aspects of present practice that demand relief? I think they have, and these are they: that in their exercise of free choice of doctor they have no protection from the possibility that the doctor they choose may (i) have failed to advance his medical knowledge beyond his undergraduate requirements or (ii) that he may be so lacking in moral responsibility as to attempt to practise on his patients all the wide range of practice and technique embraced in his legal qualification. In other words, the public's complaint towards the organized medical profession is that it has failed to ensure that its members continue to advance in medical knowledge and has failed to exercise an internal discipline that will ensure, despite their wide legal rights, that doctors practise only to the extent justified by their knowledge and experience. That this is a serious complaint is undoubted, but that it can be corrected only under a system of nationalized medicine I deny. Within our own guild and under our elected councils this internal discipline and compulsory education can be achieved, as I shall show later.

So much for the public's reaction to present-day practice; now what is the professional view of the necessity for change? As I see it, medical practice has been passing through a golden age. Average net medical incomes for many years have been higher than those of any other profession; practice has been possible in very favourable circumstances and environment; and the astonishing advances in medical knowledge maintain in the keen student abundant intellectual interest in and satisfaction with his daily work. Unless the public demands it, the initiation by the medical profession of any revolutionary change from present methods of practice would be folly; and as I see it, the public's demands can be fulfilled largely within our own fields, or at most by governments' enactions that will involve no increased subjection.

Discussion.

To sum up this discussion, I have tried to show that neither from the political nor from the financial or technical aspects of present-day practice is a revolutionary change essential. But if we as a profession are to make our present position safe, we must ourselves, within our own guilds, through our own organizations, cause a modification of present practice in certain technical measures—namely, that we strengthen our existing means of ensuring internal discipline and compulsory post-graduate medical education, and that we organize ourselves into efficient cooperative groups. This is the problem: (i) discipline, (ii) education, (iii) cooperation. How are we to solve it?

Many times in the long course of history it has happened that a great organization, grown slack in years of ease, has yet met and overcome the most fearful dangers besetting it by means of an internal reaction, or reformation. Existing agencies are overhauled, new weapons of discipline are forged and sharpened, a new spirit is created, and the old body, apparently ready for destruction, has turned the table on its adversaries and entered upon a new era of power and glory. So it must be with the organized medical profession. First we must tighten our already existent agencies of control. In recent months we have had the humiliation of watching the Federal Government, wishful of advice concerning the future of the medical profession, pass by the Federal Council of the British Medical Association and turn to another body. Why was this? Rather than blame the Government, we should ask what was wrong with our Federal Council that such a thing should happen. And if we look at the Council, what do we find? A group of mostly senior

members, meeting so infrequently that the agenda must perforce be unduly long for complete discussion; and as far as it has a policy for the future, attached to one mainly concerned with the financial aspects of practice, which improves in no way the technical defects of the present position.

To ensure its proper place in the councils of the land, a new spirit of leadership and, above all, a new policy are necessary for its vigorous revival.

Though in recent deliberations of the National Health and Medical Research Council the representatives of the Royal Colleges of Physicians and of Surgeons, and the representative of the Federal Council of the British Medical Association (while he had a free vote), all affirmed the principle of a national salaried service, probably this indicated not so much their desire for such a service as their realization that no acceptable alternative seemed to exist.

But I am trying to show that there can be an acceptable alternative, and that if we exercise sufficient courage and determination in its development we can have behind us not only the unions (as Dr. Price hopes for his panel practice service), but the whole of the responsible population of Australia. Surely this is a goal worth striving for.

Apart from the Federal Council we have in the Branch councils of the British Medical Association bodies which can do much to implement the desired reforms. By careful direction and by emphasis on the alternative to failure, much success might be attained on voluntary lines. The Ethics Committee, the Scale of Fees Committee and the Post-Graduate Committee already partly provide the machinery to achieve the triple objective of cooperation, discipline and education. Now what else can we do?

For one thing we can cease to be ostriches. If we believe that the only alternative to voluntary limitation of practice and cooperation is a nationalized service, we should support with our whole power every agency helping towards this end. The Register of Specialists is such a means, and we must not only watch that it is properly conducted, but welcome its implied sequel, which is obviously a legal limitation of specialist practice to the members recognized by the register. We can forge also a most powerful weapon to achieve such limitation by pressure on the private hospitals. In the United States of America the practising medical profession, altogether apart from government agencies, has achieved such a measure. There no private hospital that does not conform to certain standards in this regard is recognized by the medical profession. Starting with the premise that no doctor can practise adequately in all the wide range allowed by his legal qualification, medical boards decide for each hospital which doctors shall be allowed to practise in the hospital and in which branches of medicine they may practise. Thus in America, the stronghold of individualism, the medical profession has disciplined itself to an extent quite unknown here. The following extract from a letter tendered as evidence in the recent law suit of the United States of America *versus* the American Medical Association and others puts very clearly the duty of the medical profession in this regard. In this famous trial the Federal Government sued the American Medical Association under the anti-trust laws, charging restraint of practice, and much of the case rested on the decision whether the exclusion of a certain doctor from the private hospitals of the city of Washington, District of Columbia, was due to lack of professional ability or to his association with a health insurance scheme opposed by the American Medical Association. This man applied for permission to practise in a certain hospital as physician, obstetrician, gynæcologist, nose and throat specialist and general surgeon. In relation to his application Dr. Thomas Mattingly wrote as follows:

In this particular case this applicant, like myself, is already licensed by the State to practise each and every branch of the healing arts for which he has requested hospital privileges. So far as the State, in this case the Federal Government, is concerned, both the applicant and I have the legal right to practise medicine and surgery in all of its many branches, yet it is generally conceded that hospitals would be criminally derelict in their duty if they allowed the visiting staff the comprehensive privileges sanctioned by the law.

To protect the unsuspecting patient against incompetence, poor judgment, criminal negligence, and rash experimentation, any or all of which might be legally defensible, the organized medical profession, acting through the appointive powers of hospital boards and executives, has forced high and exacting standards of internal discipline, professional competency, and ethical liability upon all hospitals, without the dutiful observance of which no hospital can continue to operate with its seal of approval.

To this end each and every applicant for hospital privileges, especially in the specialties, must prove beyond any reasonable doubt their indubitable fitness to receive the same.

I can hardly conceive our Medical Council being so derelict in its duty and responsibility to prospective patients as to admit by inference that one person can adequately qualify as physician, obstetrician, gynæcologist, nose and throat specialist, and general surgeon, clothing him with authority and permission to perform the most hazardous and difficult procedures of these specialties.

In so far as we have failed in the past to apply this internal discipline to ourselves we have mortgaged our future rights to the control of our professional activities. But I believe we have still time to mend.

Next there is the question of post-graduate medical education. If we are to maintain our claim to being a learned profession, the obtaining of a registrable qualification must continue to be regarded only as the prelude to a life of study. To many of us it is; but to retain the confidence of the public that the free choice of doctor can be honestly upheld we must ensure that none of our members fails to develop adequately these post-graduate educational requirements. For those among us to whom has fallen through many years the organization of post-graduate activities, and who know with what constancy many of those who most need the instruction stay away, this problem has seemed well-nigh insoluble by voluntary methods.

I would submit that this view is unsound. With increasing cooperation in practice, bringing greater opportunity for closer relations and for closer oversight over one's neighbour's work, both the opportunity and the incentive for professional improvement will grow. And the more firmly we forge our internal disciplinary weapons, the more dangerous will become any great decline below the average standards.

And finally, this seems to me a matter in which, without any binding of ourselves to government control, an approach to the State might be valuable. If we were to ask, for the achieving of greater technical efficiency, that reregistration should be conditional on the regular carrying out of some measure of post-graduate study, I cannot think either that we should be rebuffed or that the facilities would be lacking to implement such compulsory study. Yet such a step, by increasing the efficiency of practice on its present basis, diminishes rather than increases the chance of more radical State interference.

Finally we must develop cooperative practice. The development of practice limitation within groups is a matter entirely for large towns and cities. Though in a scheme for a national medical service impressive plans for the medical service in one-man towns and small centres can be built up on paper, the fact is that the small number of doctors in such regions prevents any serious change in the technical aspects of medical practice from that now in being. The nature of practice in the isolated community must remain much the same, whatever changes may occur elsewhere. But in the areas of denser population there is everything to be said for the development of cooperative group practice. This would seem to be the place to say something about this question of group practice.

In this series of papers each author has spoken of its importance. Sir Raphael Cilento has planned his consultation centres on this basis; Dr. Price has recommended the system; I have spoken of its necessity. Now wherein lies the value of this form of practice? Group practice is seen in two forms—in the large public hospital, and

especially in its out-patient department, and in certain private clinics. In the public hospital it has evolved gradually in response to increasing specialization; in private practice more usually as a conscious planned development.

Now a group of specialists and a group practice are not the same thing, and this cannot be stressed too forcibly. A group of specialists can be the most dangerous body to whom a patient can present himself, while a group practice should be the safest. The difference lies in integration and in cooperation.

The first essential in any group practice is that the patient must be attached to a well-trained general practitioner, to whom he can turn for advice and guidance. This doctor may be practising a limited specialty, but he must have that broad general training that will allow him to assess work outside his immediate ambit. Such a man may carry out very little of the diagnostic or therapeutic procedures personally; but he is always there to correlate the specialists' findings, to act as a brake on their enthusiasms, and to act as adviser to the patient. The general practitioner may not be the most showy unit of a group clinic, but he is the most essential.

Within the sky-scraping magnificence of the Mayo Clinic there are many men world-renowned because they do one thing superlatively well, be it resecting the prostate, cutting out the stomach or examining the heart. But behind these glittering orgnaments are these other quiet figures, the practitioners to whom all patients attach themselves or are attached—the dampers to the specialists, the safety-valves for the patients. Contrast this with the practice of the average out-patient department. Primarily directed by a clerk, the poor patient proceeds from one uncontrolled specialist to another, one perhaps straightening her nasal septum, another her uterus, one removing her teeth, another her appendix, till at long last she wanders (for there is no direction) into the hands of someone with better general training, who understands that most of her symptoms are of emotional origin, and sets her on the pathway to health.

Next to integrating specialisms group practice brings the ancillary services to the doctor. With good organization the simple laboratory tests on blood and urine can be made before the patient sees the doctor, while the close-knit nature of the practice, personally and geographically, allows further investigations to be quickly and simply made.

But both the integration of specialist knowledge and the ready availability of laboratories can be obtained sometimes outside the walls of group practices, and neither in my opinion represents the real gain to the patient in attending a group practice. The greatest value of group practice lies in the development of an educated and disciplined staff.

In a successful group there is constant and intense personal consultation between its integral units. Daily, almost hourly, what is in effect a constant post-graduate study is being carried on; this results in an increasing knowledge, a levelling of experience, a standardization of skill, which is hardly obtainable in any other way. And this constant personal intercourse makes for self-discipline. There remains no room for the square peg in the round hole; he must shed the luxuries of too free speech and too individualistic a personality, or he must go. And this development of constant personal consultation is not limited to the private group practice. The schedule of conferences at the Peter Bent Brigham Hospital in Boston shows to what extent the members of that fortunate staff can benefit educationally like their private group brethren. These meetings, of course, are the breath that gives life to the staff body. Without such intercourse a set of individuals, even if they are called a hospital staff, have no corporate existence. And since the corporate staff is the soul of the institution, in the absence of such activities there can be no soul.

Group practice is capable also of solving two other interdependent problems—that of freedom of choice for patients and that of giving the capable young medical man his chance. In individual private practice the responsibility placed on the patient to make his own choice of doctor is of course one that he is quite unfitted to take; his lack of essential knowledge must often make his choice unfortunate. His application to a group, on the other hand, places the responsibility for choice on informed shoulders. As a corollary to this, it has many a time been stated sadly by specialists in the more technical branches of medicine that by the time one develops an extensive practice and reaches the position of being able to aid a substantial clientele, one's faculties are beginning to fail. The group practice, by informing the patient more wisely as to choice of doctor, is able to send work to the younger man while he is still in the full possession of his faculties.

So we see that the best group practice involves much more than an aggregation of specialists and the provision of laboratories; its success lies in the proper integration of these units, but especially in the highly educated and disciplined professional body that emerges from this manner of practice. And that is why I conceive group practice to be a necessary agency in developing these very factors that are held to be essential to the successful continuity of our present form of medical practice.

So far I have spoken mainly of group practice on the specialist plane. Even more important is group practice on the general practitioner plane, and this for several reasons: it solves the problem of freedom of choice, it brings the laboratory to the patient, it encourages limitation of practice while at the same time integrating this specialism on the general practitioner level; but especially it brings to the general practitioner the educational and disciplinary advantages outlined above.

Conclusion.

I have tried to show why there need be no change in the basic character of medical practice as we know it today. Before I conclude I should like to show why we ought not to adopt either of the two chief alternatives. As regards the health insurance scheme on a panel basis, as at present sponsored by the Federal Council of the British Medical Association, it is purely a measure involving a change in finance and offering no prospects for benefit in the technical side of practice. Actually its introduction will so kill initiative and progress that medical practice will rapidly retrogress.

Have you considered the implications of the statement that only as many doctors will be used as are necessary to work the scheme? Each individual doctor is allowed a panel of 2,000 members. This implies, then, that every practitioner in the scheme, provided he possesses a licence to practise, will be on the same basis. However junior he may be on entering the scheme, provided he has his full panel, that is the end of his financial advancement. Increasing experience and increasing responsibilities are neither rewarded nor provided for under such a system.

How could such a system possibly work when the father of a grown family will find himself at the end of his working life on exactly the same financial basis as his son just entering the service? The sooner the British Medical Association frees itself from attachment to such an absurdity, the sooner it can take again the place to which it is entitled in the health councils of the nation.

A national medical service, in my view, will fall down on the problems of organization and control. It may be theoretically satisfactory on its technical aspects; but does our experience of administrative control in the present State and Federal services, including the army, suggest that its practice will approach its ideals? Till we have more certainty in these matters, surely the wise course is to evolve a more satisfactory technical service ourselves, keeping it under control that we know and can influence.

Summary.

And now finally let me summarize the various matters I have discussed tonight. I have tried to show that neither a political nor a financial or technical reason exists for any immediate revolutionary change from the present form of medical practice.

Two much-debated alternatives—that of a panel insurance system and that of a nationalized medical service—are shown to have serious practical defects.

The weaknesses of our present type of practice have been discussed, and I have shown that in order to continue to maintain a form of practice that will be more efficient than any possible alternative, we must reform ourselves in a triple manner, by a more rigid professional discipline, by compulsory post-graduate education, and by developing cooperative practice.

The means to achieve this I have tried to show; they are briefly: (i) reorganization of the Federal Council of the British Medical Association, (ii) strengthening of the activities of the Branch councils, (iii) implementation of the Register of Specialists, (iv) enforcing of practice limitation within the private hospitals, (v) alteration of the registration requirements to ensure post-graduate education, (vi) in the larger centres the organization of practice limitation within cooperative groups. I believe all these to be practical and possible.

Reference.

(a) B. M. Stanfield: "Private Rights in Russia", Carnegie Endowment for International Peace and International Conciliation, 1941.

APPLIANCES FOR USE WITH THOMAS LEG SPLINT.

By W. A. PRYOR,
Ballarat.

IN the *British Medical Journal* of September 27, 1941, at page 442, is a description by Colonel McCusker of an apparatus for use with the Thomas leg splint over the clothes, and with a boot on. The apparatus is intended for first aid purposes and transport of casualties. When this was tried, disadvantages appeared. Many types of alterations were suggested and made, until the apparatus to be described was evolved. Little was left of the original except part of the idea, and the stockinet. The following is a description of the materials used.

1. A piece of stockinet doubled over and stitched to form a "sleeve", which slips onto the Thomas splint forming a cradle for the injured leg. As Colonel McCusker said in his description, the leg of a pair of long underpants does admirably.

2. A piece of spring steel three-quarters of an inch wide and one-sixteenth of an inch thick, shaped like a bicycle clip with the ends turned in. This is drilled to take a piece of hard drawn wire one-eighth of an inch in diameter and about ten inches long. The ends of this wire are turned over to prevent their slipping out.

3. A support for the end of the splint. This slips over the traverse bar of a military type stretcher, and the weight of the splint fixes it in position.

4. A piece of cord or a triangular bandage to take extension from the spring clip to the end of the splint.

5. For use without a boot, a flat piece of wood measuring about ten inches by three inches by half an inch.

The method of use is as follows. The stockinet is pulled part way onto the Thomas splint before the latter is placed on the leg. The ring is adjusted and the stockinet is pulled up. The spring clip is applied to the boot immediately in front of the heel, the inturned ends of the clip going in between sole and upper.

While the foot is held to overcome the eversion usually present, the wire bar is slipped under the inner bar of the splint and left above the outer bar. If this cannot be done easily, the ends of the wire are tied to the side bars of the splint.

The spring clip is tied to the end of the splint to take the required extension. This clip will stand much greater strain than any required extension will cause. The support is now slipped onto the traverse bar of the stretcher, to take the end bar of the splint when the patient is placed on the stretcher. Fixing appears to be unnecessary. With the appliance in position a "patient" (without a fracture) has been tossed about on a stretcher until his body left the canvas, but nothing was disturbed.

For use without the boot or stout shoe (for example, females), application is modified. The spring clip is applied to the piece of wood so as to bring the line of extension to about the front of the heel—that is, in the line of the tibia. The wood is then placed against the sole of the foot, where it is fixed with bandages, extension being taken from the clip as before.

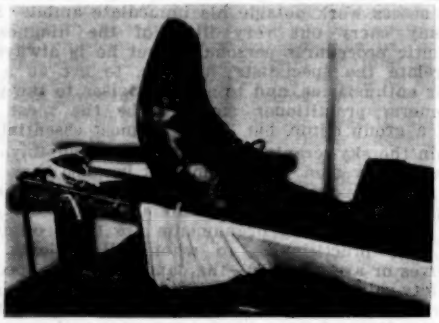

FIGURE I.
Showing lateral view of attachment.

The pieces described are easy to make and can be quickly applied, even in the dark. A number of them have been made by some members of the Volunteer Defence Corps, Ballarat Section, who made many models before those described.

FIGURE II.
Showing view of attachment from below.

The support illustrated is for use with the military type stretcher with flat traverse bar, but the attachment can be varied to suit almost any shape. This support can also be used to prop the end of the splint if the patient is unloaded onto a floor or bed from the stretcher.

RESPIRATOR "CLIP-INS".

By J. BRUCE HAMILTON,
Major, Australian Army Medical Corps.

P. KINMONT (1941), writing in *The British Journal of Ophthalmology* of March, 1941, described and illustrated "a simple optical appliance for use with respirators", which must have arrested the attention of many readers; but I wonder how many readers made a series of practical tests with his device. Any who did so would readily find, as I did, that many minor adjustments were advisable for a more comfortable and serviceable fitment.

First, it was found, owing to the wide interpupillary distance of the respirator, that the position of the "clip-in" lenses must be arranged so that, instead of covering the lower half of the respirator eye-piece, as advised by Kinmont (Figure I), they had to cover the inner half (Figure II).

Secondly, it was found by the use of a vertical rod, together with a thumb-screw for holding the lens, that the lens centre could be moved up or down to correspond more accurately with the pupillary centre (Figure II).

Thirdly, it was decided that if the rim holding the lens as well as the "clip-in" frame could be fixed into the screw rim of the respirator eye-piece, much greater stability of the lens was insured in case of shell burst. This was carried out by angling the base of the vertical rod (Figure IIIa).

FIGURE I.

Fourthly, it was thought that, if the vertical rod was made completely circular in the case of presbyopes, they might (instead of fixing the correcting lens) release the thumb-screw and swing the correcting lens out of place when viewing distant objects (Figure IIIb).

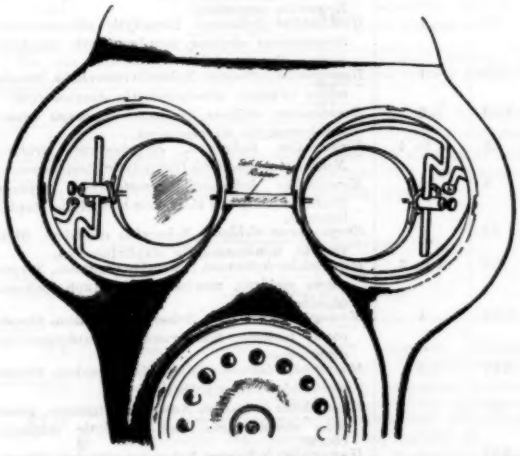

FIGURE II.

Fifthly, the marking of the axis now needed revision. This was solved by marking the correcting lenses with the usual horizontal marks, and then fixing their positions with relation to the mask by applying by means of rubber solution a thin strip of self-vulcanizing patch rubber to the bridge of the respirator (Figure II). The marking of the metal rim of respirator was impracticable, because this might be tightened or loosened if the respirator glass needed to be replaced, and then a false axis was produced.

Sixthly, the relative side of each "clip-in" must be indicated. This was done by embossing a small "R" on the top of the spring of the right clip-in (Figure IIIa).

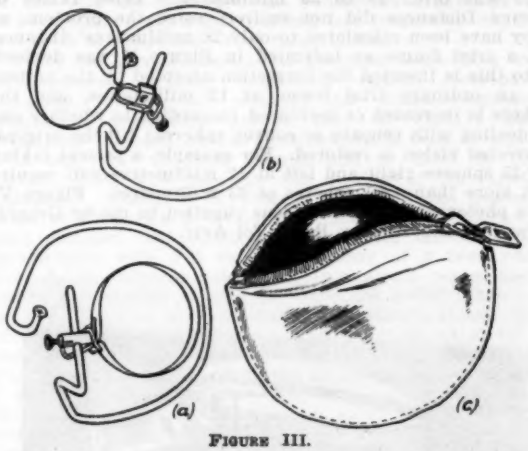

FIGURE III.

Figure IV indicates the manner of insertion of the "clip-ins". These are usually left in a leather case, as indicated in Figure IIIc, but may be packed away *in situ*

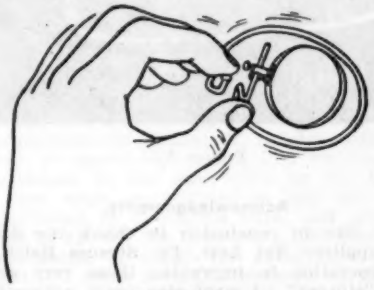

FIGURE IV.

with the respirator if a gas attack is expected. This, I think, is the great advantage of the "clip-ins" over the Mark III spectacles, which take some time to adjust under

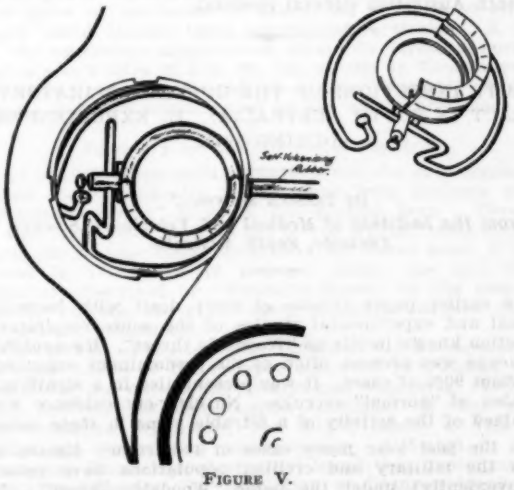

FIGURE V.

the respirator. Further, the Mark III spectacles, if they become dim beneath the respirator, cannot be removed and cleaned at all during a gas attack, whereas the "clip-ins" can be removed in a moment, cleaned and replaced rapidly.

The method of measuring refraction for such lenses exercised our minds, for the distance from the anterior corneal surface to the posterior surface of the "clip-in" lens was often 25 to 30 millimetres. Zeiss Tables of Vertex Distances did not entirely solve the problem, as they have been calculated to only 20 millimetres' distance. So a trial frame as indicated in Figure V was devised. Into this is inserted the correction accepted by the patient in an ordinary trial frame at 12 millimetres, and the sphere is increased or decreased (according to whether one is dealing with concave or convex spheres) till the original corrected vision is restored. For example, a patient taking +7·25 spheres right and left at 12 millimetres will require not more than +6·5 spheres at 25 millimetres. Figure VI is a photograph of a fitted lens supplied to me by General Suppliers, 108 Allenby Road, Tel Aviv.

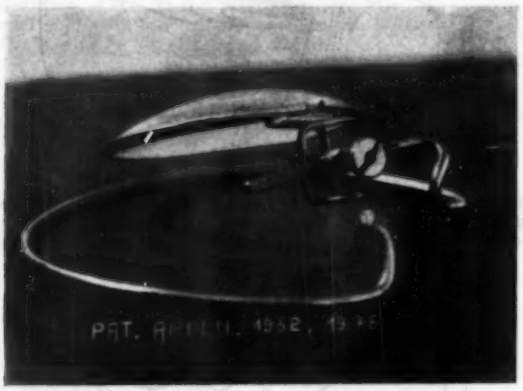

FIGURE VI.

Acknowledgements.

I should like in conclusion to thank the director of General Suppliers, Tel Aviv, Dr. Strauss Reich, for his willing cooperation in improving these very serviceable respirator "clip-ins". I must also again acknowledge the originality of Dr. P. Kinmont in devising the first pattern, and thank Corporal R. P. Renn for drawing the illustrations. Finally, for permission to publish these notes I must thank Colonel W. Summons, Commanding Officer of the Seventh Australian General Hospital.

ACUTE INFECTIONS OF THE UPPER RESPIRATORY TRACT IN SOUTH AUSTRALIA: II. EXPERIENCES DURING 1941.

By JESSICA MAWSON,[1]

From the Institute of Medical and Veterinary Science, Adelaide, South Australia.

AN earlier paper (Cooke *et alii*[1]) dealt with bacteriological and experimental studies of the acute respiratory infection known locally as "Woodside throat". *Hæmophilus influenzæ* was present, often as the predominant organism, in about 90% of cases. It was present also in a significant number of "normal" recruits. No clear-cut evidence was obtained of the activity of a filtrable virus in these cases.

In the past year many cases of respiratory disease in both the military and civilian populations have passed (conveniently) under the name "Woodside throat". In general they were fewer and much less severe than in 1940; the absence on active service overseas of the medical officer who described exactly the symptoms of "Woodside throat" (Seymour[2]) renders clinical comparison difficult. During this time, however, we have continued at this institute to study the bacteriological flora of the naso-pharynx and to search for the presence of a causative virus, particularly of the influenza viruses A and B. The methods used were in general those described in the previous paper, without the inoculation of human volunteers, but often with measurement of the antibodies to influenza viruses in the serum of patients before and after infection and with the aid of Hirst's test.[3]

Bacteriological Examination.

Nasopharyngeal swabs were inoculated on to horse blood agar plates at body temperature and incubated at 37° C. The predominant organisms were noted. *Streptococcus viridans* and *Streptococcus pneumoniæ* were distinguished by the bile solubility test. Neisserian species were examined culturally and biochemically, and their classification was based upon the criteria set forth by Topley and Wilson.[4] Suspicious organisms were tested against meningococcal antiserum monospecific to types I, II and IV. Colonies resembling *Hæmophilus influenzæ* were cultured in Fildes's medium, and tested for their requirements of the accessory

TABLE I.[1]

Bacterial Flora in Cases of "Woodside Throat", 1941.

Case Number.	Duration of Symptoms in Days.	Bacteriological Findings.[1]
Australian Military Forces.		
I	1 to 2	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria pharyngis sicca* (hæmolytic streptococcus).
II	<2	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria flava ii* or *iii*, non-hæmolytic staphylococcus.
III	<2	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria meningitidis*, hæmolytic staphylococcus.
IV	<1	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria flava iii* (diphtheroid).
V	<1	*Hæmophilus influenzæ*, green-zone streptococcus, Neisserian organism.
VI	1	*Hæmophilus influenzæ*, hæmolytic streptococcus, *Streptococcus viridans*, non-hæmolytic staphylococcus, diphtheroid.
VII	<1	*Hæmophilus influenzæ*, *Neisseria catarrhalis*, *Streptococcus viridans*, non-hæmolytic streptococcus.
VIII	2	*Streptococcus viridans*, *Neisseria pharyngis sicca*, non-hæmolytic streptococcus.
IX	3 to 4	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria meningitidis* (hæmolytic streptococcus).
X	1	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria pharyngis sicca*, non-hæmolytic staphylococcus.
XI	6	*Streptococcus viridans*, Neisserian organism, diphtheroid, non-hæmolytic staphylococcus.
XII	2 to 3	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, non-hæmolytic staphylococcus, diphtheroid.
XIII	4	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, non-hæmolytic staphylococcus, diphtheroid.
XIV	<1	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, diphtheroid.
XV		*Hæmophilus influenzæ*, Neisserian organism, green-zone streptococcus, non-hæmolytic staphylococcus.
XVI	<1	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, diphtheroid.
XVII	<1	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, non-hæmolytic streptococcus.
XVIII	1	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria flava ii*, non-hæmolytic staphylococcus-diphtheroid.
XIX	4	*Hæmophilus influenzæ*, diphtheroid, non-hæmolytic staphylococcus.

[1] The organisms in parentheses were present in very small numbers; those followed by (?) were slightly atypical; those underlined were the predominant organisms.

[1] Working with grants from the Commissioners of Charitable Funds and the University of Adelaide.

TABLE I.—*Continued.*
Bacterial Flora in Cases of "Woodside Throat", 1941.—Continued.

Case Number.	Duration of Symptoms in Days.	Bacteriological Findings.[1]
Royal Australian Air Force.		
XXXII	<1	Hæmolytic streptococcus, *Streptococcus viridans*, *Neisseria catarrhalis* (?), diphtheroid.
XXXV	1	Green-zone streptococcus, *Neisseria catarrhalis* (?), diphtheroid.
XXXVI	1	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Neisseria flava ii* (?).
XXXVII	1	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, non-hæmolytic staphylococcus.
XLI	1	Green-zone streptococcus, *Hæmophilus influenzæ*, Neisserian organism.
XLII	1	Neisserian organism, *Streptococcus viridans*, diphtheroid, hæmolytic streptococcus.
XLVI	1	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*, weakly hæmolytic streptococcus.
XLVIII	2 to 3	*Hæmophilus influenzæ*, non-hæmolytic staphylococcus, Neisserian organism, diphtheroid.
L	3	*Neisseria meningitidis* (?), *Hæmophilus influenzæ*, *Streptococcus viridans*.
Civilians.		
XXII	1	*Hæmophilus influenzæ*, non-hæmolytic staphylococcus.
XXIX	4	*Streptococcus viridans*, diphtheroid.
XXXVIII	1	*Hæmophilus influenzæ*, *Streptococcus viridans*, *Diplococcus crassus*, non-hæmolytic staphylococcus, diphtheroid.
XL	3	*Streptococcus viridans*, *Neisseria meningitidis*, hæmolytic streptococcus, diphtheroid.
XLIV	3	*Streptococcus viridans*, *Neisseria flava iii* (?), weakly hæmolytic streptococcus, non-hæmolytic staphylococcus.
XLV	2	*Hæmophilus influenzæ*, Neisserian organism, *Streptococcus viridans*.
XLIX	2	Neisserian organism, *Streptococcus viridans*, diphtheroid.
LI	1	Neisserian organism, *Streptococcus pneumoniæ*.
LII	3	Hæmolytic staphylococcus, *Streptococcus viridans*, Neisserian organism.
LIII		*Streptococcus pneumoniæ*, Neisserian organism, non-hæmolytic staphy ococcus, diphtheroid.

[1] The organisms in parentheses were present in very small numbers; those followed by (?) were slightly atypical; those underlined were the predominant organisms.

food factors V and X. All the strains proved to require both, so agglutination tests with type serum were made.

As an indication of the prevalent normal nasopharyngeal flora, swabs were taken from eight healthy civilians and the cultures were treated as described above.

TABLE II.
Bacterial Flora of Normal Naso-Pharynx, 1941.

Case Number.	Bacteriological Findings.[1]
XX	*Streptococcus viridans*, Neisserian organism, *Hæmophilus influenzæ*, diphtheroid, non-hæmolytic staphylococcus.
XXI	*Streptococcus viridans*, *Streptococcus pneumoniæ* (non-pathogenic to mice), non-hæmolytic streptococcus, diphtheroid.
XXIV	*Neisseria flava ii*, hæmolytic staphylococcus, non-hæmolytic streptococcus, *Streptococcus viridans*, diphtheroid.
XXV	*Streptococcus viridans*, *Neisseria flava iii*, *Hæmophilus influenzæ*, non-hæmolytic staphylococcus, (hæmolytic streptococcus).
XXVI	*Streptococcus viridans*, Neisserian organism, non-hæmolytic streptococcus, diphtheroid.
XXX	*Neisseria meningitidis*, *Streptococcus viridans*, non-hæmolytic staphylococcus.
XXXI	Non-hæmolytic staphylococcus, green-zone streptococcus, diphtheroid.
XXXIV	*Streptococcus viridans*, *Neisseria catarrhalis* (?), *Hæmophilus influenzæ*, diphtheroid, (hæmolytic streptococcus).

[1] The organisms in parentheses were present in very small numbers; those followed by (?) were slightly atypical; those underlined were the predominant organisms.

Thus the most prevalent organisms from infected throats were *Streptococcus viridans* (29 of 39) and five undifferentiated green-zone streptococci, *Hæmophilus influenzæ* (26 of 39) and non-meningococcal Neisserian organisms (22 of 39); other organisms occurring less frequently included *Neisseria meningitidis* from three cases.

From the normal throats the prevalent organisms were *Streptococcus viridans* (eight of eight), *Hæmophilus influenzæ* (three of eight), and non-meningococcal Neisserian organisms (about four of eight); other organisms included *Neisseria meningitidis* (one of eight).

In the light of these results and of those of 1940, further work was done on the strains of *Hæmophilus influenzæ*. Colonies on Fildes's agar did not resemble those of Pittman's S strains (Pittman[10]). Pathogenicity tests revealed that strain 38 killed mice injected intraperitoneally with 0·25 cubic centimetre of a twenty-four hour broth culture. However, this strain when tested again, and strains 46 and 48, were not lethal when two cubic centimetres were injected. Agglutination tests with Pittman's antisera types *a*, *b*, *e* and *f* carried out at 37° C. and 55° C. revealed cross-agglutination to a greater extent than was reported by Pittman working with pathogenic S strains; but each strain was not agglutinated by all the types, as Pittman found her R strains to be. Platt,[10] working with nasopharyngeal strains from healthy people, found that it was not possible to distinguish between S and R strains by agglutination reactions, nor was it possible by this means to divide the strains into serological groups. None of the "Woodside throat" strains was agglutinated by Pittman's type *a* antiserum; only two were agglutinated by type *b*, the majority were agglutinated by type *e* or type *f* (or both), while seven of the strains were not agglutinated by any of the four types.

To determine whether the 1941 strains were antigenically similar to the 1940 strains, agglutination tests were made with a serum prepared against C2, isolated from a typical case in 1940. Of eleven 1940 strains, four were agglutinated by C2 antiserum to the same titre as the homologous organism, two were agglutinated to half the titre, four were agglutinated to one-eighth titre, and one was not agglutinated at all. Of the twenty-one 1941 strains, fifteen were agglutinated to about the same titre, two were agglutinated to a lower titre, and four were not agglutinated at all. Thus in neither 1940 nor 1941 were all the strains antigenically similar, but the 1941 strains were not very dissimilar from those of 1940.

To demonstrate a possible increase in agglutinins to *Hæmophilus influenzæ* during the course of the infection, ten pairs of specimens of acute and covalescent serum were tested against three representative strains. A few of the specimens agglutinated strain 25 (from a normal throat) to a titre of 1 in 20; but no rise in titre followed infection. Strains 45 and 22 (from "Woodside throat" cases) were not agglutinated by any of the specimens.

Summary of Bacteriological Findings.

As in 1940, *Hæmophilus influenzæ* was the only organism found more frequently in the flora from patients with "Woodside throat" than in the normal flora. Though it was found only in three out of ten civilian cases and in three out of nine Royal Australian Air Force cases, it was found in 17 out of 19 military cases; the last were definitely described as "Woodside throat" by the medical officer, whereas the other cases probably included other respiratory infections.

The strains of *Hæmophilus influenzæ* did not appear to be either the S or the R types described by Pittman, but resembled the normal nasopharyngeal strains of Platt in their heterologous agglutination reactions. If they were the causative organisms, one might expect a rise in agglutinin titre during convalescence. Although in this connexion Smorodinsteff *et alii*[11] found that experimental infection following the inhalation of living cultures of Pfeiffer's bacillus produced a rise in circulating agglutinins to the bacillus, *Hæmophilus influenzæ* has not been recorded as producing high antibody titres during natural infections in man, and high titres are difficult to produce by artificial

immunization of animals. Hence the fact that there was no increase of titre in "Woodside throat" cases does not exclude the possibility that *Hæmophilus influenzæ* was the causative agent.

Examinations for a Causative Virus.

Examinations for a causative virus were made; the procedure was based upon the methods recommended by Burnet.[9]

Search for Evidence of a Virus in Nasal or Pharyngeal Washings.

From the earlier patients nasal washings were taken, and from the remainder the products of throat gargling; in both cases the material was centrifuged at 3,000 revolutions per minute for twenty minutes. Some of the supernatant fluid was kept to inoculate mice, while the rest was filtered to remove bacteria; the earlier specimens were filtered through a Berkfeld N filter, and the later ones through a collodion membrane with an average pore diameter of 0·8μ.

Mouse Inoculation.—Mice were inoculated intranasally with the supernatant fluid (0·05 cubic centimetre per mouse, under anæsthesia, and six mice per case). Fourteen days later they were tested by intranasal inoculation for immunity to the Melbourne strain of influenza A virus and to the Lee strain of influenza B virus. The resulting lung lesions were compared with those in control mice previously uninoculated. Of 19 cases, in 14 the results were negative; in Cases XII, XL and LII a greater immunity to influenza A virus was revealed than in the controls; and in Cases XXII and XLI a slight increase in resistance to influenza B virus was found.

Egg Inoculation.—The sterile filtrates were inoculated into the amniotic cavity of six eleven or twelve day developing fowl embryos (Burnet[9]). In most cases four serial passages were made; there was no evidence of the growth of a virus.

Tests with Samples of Serum Taken Before and After Infection.

Mouse Neutralization Tests.—Mouse neutralization tests were performed with undiluted serum and a suitable dilution of allantoic fluids from embryos infected with mouse-adapted strains of influenza A and B viruses. When the mice died before the seventh day the average day of death was used for comparison instead of the average lung lesions; the latter were recorded as ranging from "4" (complete consolidation) to "0" (no consolidation). In only two cases (III and XLI) did the mice inoculated with the virus and the "convalescent" serum show an obviously less severe infection than those inoculated with the corresponding "acute" serum and the virus. In both cases the virus was influenza A.

Chorio-Allantoic Membrane.—Titration on the chorio-allantoic membrane (Burnet[110]) could be carried out only with the Melbourne egg-adapted strain. In only one case (LII) was there a significantly greater reduction of pocks when the convalescent serum was added to the virus than when the "acute" serum was added.

Hirst Test.[9]—In a personal communication Burnet has described the exact technique of a test to compare the powers of various types of serum to inactivate the agglutination of chick-embryo red cells by influenza A and B viruses. A preliminary titration of the virus is made against a standard immune serum by allowing equal quantities (0·25 cubic centimetre) of a dilution of the serum (usually 1 in 100) and of varying dilutions of the virus (as allantoic fluids) to stand at room temperature for fifteen minutes. Then 0·25 cubic centimetre of a 2% suspension of chicken red cells is added and the tubes are shaken and left at 4° C. until the cells have sedimented in the "negative" controls. The type of deposit varies from a thin layer of obviously particulate nature and spreading over all the base of the tube (+), to a denser deposit over a small area with an irregular edge of clumped cells (±), and finally to a compact lens-shaped

TABLE III.

Influenza Virus Work, 1941.

Case Number.	Tests with Washings.				Tests with "Acute" and "Convalescent" Serum.									
	Lung Lesions after Subsequent Inoculations.				Mouse Neutralization.				Chorio-allantoic Tests.		Hirst Tests.			
	Influenza A Virus.		Influenza B Virus.		Influenza A Virus.		Influenza B Virus.				Influenza A Virus.		Influenza B Virus.	
	Test.	Control.	Test.	Control.	Acute.	Convalescent.	Acute.	Convalescent.	Acute.	Convalescent.	Acute.	Convalescent.	Acute.	Convalescent.
I	$4^{3\cdot33}$	$4^{3\cdot0}$	2	2	2·2	3·5	$4^{3\cdot0}$	4^{4}	3·7	4·7	0·2	0·2	0·4	0·5
II	$4^{3\cdot0}$	$4^{3\cdot0}$	1·3	2	0	0	4^{3}	4^{3}	1·9	2·9	0·08	0·08	2	2
III	4^{3}	$4^{3\cdot0}$	2·3	2	1·8	0	4^{3}	4^{3}	0·92	0·202	0·4	0·4	0·8	0·8
IV	$4^{3\cdot3}$	$4^{3\cdot0}$	2·6	2	0	0	2·6	2·6	0·16	0·82			1·6	2·6
XI	4^{7}	$4^{3\cdot0}$	0·66	0	0	0	0	2·3			0·064	0·064	1·6	1·6
XII	$3^{\dagger}$	$4^{3\cdot0}$	0	0	0	0	2·6	2·6			0·064			
XIV	4^{5}	$4^{3\cdot0}$	1·3	0	2·5	2·3	2	$4^{3\cdot3}$	1·5	0·68	0·012	0·012	0·8	0·8
XIX	4^{7}	$4^{3\cdot0}$	0·5	0										
XXII	2·6	2·3	0	1·3										
XXXII	3	2·6	0	1										
XXXV	2	2·6	0	1										
XL	1·6	3	1	1·3	0	0·5	0·6	0·9	0·36	0·23	0·016	0·024	3·2	1·6
XLI	3	3	0	1·3	1·3	0	$4^{3\cdot3}$	$4^{3\cdot3}$	0·0043	0·0061	0·53	0·53	1·6	1·2
XLII	3	3	0·5	1·3	0·5	0	$4^{3\cdot3}$	$4^{3\cdot3}$	0·0055	0·0091	0·03	0·02	1	1
XLVIII	3	3	0·6	0·6	0·6	0·75	1	1	0·107	0·040	0·075	0·075	1·6	1·6
XLIX					0·6	1	1·3	—						
L	3	3	—	0·6	0·75	1	0·5	0	0·109	0·051	0·05	0·05	1	1
LI	4	2	0·6	0										
LII	3·3	4^{1}	2	1·2	0	0·3	0	0·6	0·19	0·0025	0·024	0·024	0·8	0·8
F‡									0·12	0·02	0·16	0·16	1·6	19·2
D‡									28	0·0034	0·08	1·28	4	5

* Index figures are average day of death.

† Results underlined are considered to indicate presence of influenza virus.

‡ "F" and "D" are ferrets inoculated with mouse strains of influenza B and influenza A virus respectively. Two serum samples were treated in exactly the same way as the human serum.

deposit in the very centre of the base of the tube, with a smooth edge (-). The tube showing a (±) reading was taken as the end-point. The specimens of human serum are then titrated against a constant amount of virus. Since the titre of the virus varies from one occasion to another, for comparative purposes a value is calculated by dividing the titre of the test serum by that dilution of the standard serum which neutralized the virus in the preliminary titration.

In no instance did "convalescent" serum from patients suffering from "Woodside throat" inactivate the virus more than the corresponding "acute" serum.

Summary of Results.

No virus was isolated directly in any of the cases.

Indirect tests showed that in the majority of cases influenza A and B viruses were not present. However, in one military case (XII) and one civilian case (LII) there was evidence of influenza A virus. Unfortunately sufficient serum was not available in Case XII for all the serum tests. In Case LII only one of the three tests revealed an increase in titre; but this result was obtained on three different occasions, and is probably more reliable than the Hirst test (at the moment perhaps not adequately controlled) and the mouse test (since at the time of testing the stock mice were suffering from a chronic lung disease).

These results confirm the belief that it is easier to demonstrate an infection with influenza A virus by the indirect methods used than by the isolation of the virus as attempted.

Conclusions.

1. *Hæmophilus influenzæ* was present in more cases of "Woodside throat" than in "normal" throats; the strains isolated were not antigenically similar, nor was there a rise in agglutinating titre to the strains during convalescence.

2. Of 14 cases, only two were shown to be due to infection with influenza virus A, and none to influenza virus B; but no virus was isolated in these 14 cases nor in five other cases.

Acknowledgements.

The strains of virus were supplied by Dr. F. M. Burnet and Pittman's antiserum types by Dr. A. E. Platt; I wish to thank both of these workers.

I am grateful to Major E. H. Lewis and to Squadron-Leader F. R. Wicks for access to the Australian Military Force and Royal Australian Air Force patients.

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THE SYMPTOMATOLOGY AND TREATMENT OF THE BITES OF AUSTRALIAN SNAKES.[1]

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IN cases of bites by the common Australian snakes it is difficult, if not impossible, to determine the species of snake causing the bite from the symptoms presented by the patient. Several factors operate in bringing about this state of affairs. The symptoms which follow the bites of all the common Australian species bear a close general similarity. There is much variation in the picture presented after the bite of any single species; this is dependent partly upon the site and nature of the bite and partly upon the dose of venom injected. Finally, there are far too few carefully observed and completely recorded cases of snake bite in Australian medical literature to afford a really accurate definition of the symptomatology of the bite of each species.

Before discussion of the symptomatology of snake bite it is well to recall the pharmacological actions of the Australian snake venoms. Their dominant action is neurotoxic; but it is still not clear how much of this is central and how much peripheral. The nausea and vomiting which occur when the venom first gains entry to the circulation and the faintness and drowsiness which may shortly ensue are possibly all central effects. The venoms have strong peripheral effects, both sensory and motor. They have a paralysing action upon sensory and proprioceptive as well as upon motor nerve endings. Blunting of sensation and incoordination of movement may be peripheral effects. Paralysis of skeletal muscle is rarely complete, and the paresis which occurs is probably peripheral, for the venoms have a curari-like action on motor endings and a further direct action upon muscle itself. To this curari-like action the phrenic end plates in the diaphragm are particularly sensitive; and partial curarization of the diaphragm plays an important part in the failure of respiration, which is the commonest cause of death after the bites of these snakes. Motor paralytic effects, which are conveniently grouped under the head of ocular and bulbar effects, are common in the late stages of fatal snake bite, though no convincing evidence has been put forward that they are central. Such symptoms include bilateral ptosis, paralysis of the ciliary muscles with fixed dilated pupils, paralysis of the soft palate, and paresis of the tongue with difficulty of speech and swallowing. In animals poisoned with neurotoxic venoms "starting movements" are observed in the late stages of poisoning. These convulsive movements are probably central, and may be caused by low-grade asphyxia or directly by the action of the venom.

The extent to which this neurotoxic action is developed determines the toxicity of the Australian venoms. The venoms of the tiger snake (*Notechis scutatus*), of the death adder (*Acanthophis antarcticus*), of the copperhead (*Denisonia superba*) and of the common brown snake (*Demansia textilis*) are all powerfully neurotoxic; but the venom of the black snake (*Pseudechis porphyriacus*) is only feebly so. It is for this reason that the bite of this last-mentioned snake is rarely if ever fatal. Of the rarer species, the venom of the taipan (*Oxyuranus scutellatus*) is powerfully neurotoxic; and since it is a large snake with well-developed venom glands and biting apparatus, its bite is said to be generally fatal. The venoms of the snakes of the genus *Hoplocephalus* are also powerfully neurotoxic.

The second group of actions possessed by the Australian snake venoms is linked up with their hæmolytic and cytolytic power. It leads, as Feldberg, Trethewie and I have shown, to the liberation of histamine from injured

[1] This article is a post-graduate lecture which was delivered on June 3, 1938, at Brisbane, under the auspices of the Queensland Post-Graduate Committee. It was published in this journal on October 8, 1938. At the suggestion of the Queensland Branch of the British Medical Association it has been revised by Colonel Kellaway and is now republished in view of the importance of the subject at the present time.

cells. We believe that the formation of lysocithin-like substances from the lipins of the cells is an intermediate step in the liberation of histamine, and that the histamine set free acts locally where it is liberated. It gives rise to those symptoms of cardio-vascular failure which follow the bites of the common Australian snakes. The most potent of the Australian venoms from this point of view are those of the black snake (*Pseudechis porphyriacus*) and the copperhead (*Denisonia superba*); but all the other common venoms possess this activity, though in lesser degree.

The third action of these venoms is coagulant, and depends, as Eagles has shown (at least for tiger snake venom), upon the conversion of prothrombin to thrombin. The venoms of the death adder and copperhead lack this property, which is strongly developed in the venom of the tiger snake (*Notechis scutatus*), the brown snake (*Demansia textilis*) and the black snake (*Pseudechis porphyriacus*), and is present also in the venom of the taipan (*Oxyuranus scutellatus*).

When these coagulant venoms gain entry to the circulation they cause coagulation in the vessels. If the dose entering is small it may cause only the formation of a small amount of ante-mortem clot in the right auricle and ventricle; but with large doses intravascular clotting takes place in the portal and mesenteric veins and inferior *vena cava*. Under these conditions death may take place in three or four minutes, with convulsive seizures and failure of respiration. Entry of venom directly into the circulation following the bite of most Australian snakes must be very rare. Their fangs are short, and only by an unlucky mischance does the venom of the tiger snake or black snake find its way directly into a vein or other vascular space. In the cases of bites by the brown snake, intravascular coagulation may occur without the entry of venom directly into a vessel during a bite. Unlike the coagulant principle in the other common venoms, that of the brown snake is rapidly diffusible, and even when injected subcutaneously may gain entry into the vascular system in sufficient amount to cause intravascular coagulation. This fact, as will be seen, accounts for the extreme variability of the symptoms presented after bites by this snake.

The most important factor in determining variability in the onset and course of symptoms after the bite of a snake is the dose of venom which is injected. N. Hamilton Fairley has discussed fully the conditions which operate in determining this, but it is perhaps worth while for us to recall them here. The distance between the punctures is, as Fairley showed, a useful clinical criterion of the size of the snake responsible for the bite. Naturally, the larger the snake of any given species, the larger its venom glands and the longer its fangs. The nature of the bite is also important. At a "snap bite" less venom is introduced than when the snake holds on, contracting first on one mandible and then on the other. In the case of the Australian snakes, which all possess anteriorly grooved poison fangs, the question as to whether the bite takes place in a naked part or through several layers of clothing is obviously important, because the venom escapes more easily from the upper part of the groove through the loose texture of clothing than into the denser texture of the tissues where the point of the fang is embedded. The previous history of the snake is also significant. If the snake has just previously bitten some other object less venom is available. Still less venom is available as a rule from a third bite. Finally, there is the possibility already mentioned of a chance bite into a vein which may determine the almost immediate onset of symptoms or, if the venom contains a coagulant principle, rapid death from intravascular coagulation.

Symptoms.

In describing the symptoms of snake bite it is convenient first to give a general account and then to indicate the variations observed following the bites of different species.

Symptoms of Onset.

The early symptoms generally occur from fifteen minutes to two hours after the bite, though longer delay may occur if efficient first aid measures have been applied, or if the dose of venom injected is barely lethal or sublethal. The first symptoms may occur when the ligature is first released and venom enters the blood. These are nausea, vomiting and faintness, rapidly followed by drowsiness. Sometimes the patient complains of pain in the chest or abdomen.

Symptoms due to Cytolytic Action of the Venom with Signs of Peripheral Circulatory Failure.

The patient is prostrated and continues to vomit. The skin is blanched and sweats freely; the extremities are cold; the pulse is rapid and thready; the respirations are frequent and shallow; the blood pressure is lowered.

Symptoms of Neurotoxic Origin.

The gait is incoordinate, the patient walking like a drunken man. Sensation is blunted and drowsiness increases. The pupils are dilated and fail to react to light or accommodation. Bilateral ptosis is present. The tongue is paresed. Speech is slurred and difficult. The soft palate may be paralysed, with nasal speech. Swallowing is difficult; the limbs are weak though not completely paralysed; the respirations become slow and the patient passes into coma. The respirations may become costal in type and finally cease. Death is sometimes preceded by convulsions.

General Features.

Generally albuminuria is present, with blood pigment or blood cells in the urine. In the case of venoms containing a coagulant, sometimes gross hæmorrhage from the stomach or bowel occurs. Hæmoptysis, which is probably of similar origin, has also been described.

Symptoms due to Bite from Different Snakes.

The Tiger Snake.—The venom of the tiger snake contains a coagulant principle which converts prothrombin into thrombin. It is only feebly hæmolytic, but has some cytolytic action, as evidenced by the symptoms of peripheral circulatory failure observed in many cases. Its predominant effects are upon the nervous system, both central and peripheral. The symptoms after a bite from this snake very closely follow the general description given above. A single lethal dose takes about forty-eight hours to induce a fatal result, and death occurs by respiratory failure. The bite may be fatal within a few minutes if the venom is injected directly into a blood vessel or if the bite is by a large snake and a great quantity (100 milligrammes of dry venom) is injected.

The Death Adder.—The venom of the death adder contains no coagulant principle and it is only feebly hæmolytic. It has a strong neurotoxic action which is partly peripheral. It has also some cytolytic action, as is evidenced by petechial hæmorrhages in various organs at death and by the occurrence of symptoms of peripheral circulatory failure. Death is generally caused by failure of respiration. The symptoms follow the general description closely, but gross hæmorrhages from the mucous membranes are not observed.

The Brown Snake.—The symptoms which follow the bite of the brown snake are somewhat variable. This venom is powerfully neurotoxic, and part of this effect is a peripheral curari-like action. It has little hæmolytic power. It has a powerful coagulant action; but the active agent is highly diffusible and death from thrombosis may even follow subcutaneous or intradermal injections in animals. Many of the aberrant symptoms in man are unquestionably caused by thrombosis in various sites which may give rise to the hæmorrhages from the mucous membranes. The severe abdominal pain followed by the passage of bright blood in Dr. Leckie's case, recorded by N. H. Fairley, was probably caused by mesenteric thrombosis. In Dr. Foxton's case the dominant feature was persistent and severe headache, with repeated convulsive attacks towards the end. Hæmorrhagic lesions in the medulla and pons were found *post mortem*. Dr. Baker's case has not previously been recorded.

A girl, aged thirteen years, was bitten on the naked foot below the metatarsal joint of the great toe. An ineffective ligature was applied and the bitten area was incised. About a quarter of an hour after the bite the patient vomited; within a further half hour she complained of headache and nausea, and vomited forcibly and frequently. She was still vomiting at the end of the first hour after the bite and complaining of severe abdominal pain. This continued, and a few minutes later she was vomiting dark brown fluid and was extremely giddy. Two hours after the bite her pulse rate was 108 beats per minute, her temperature was 36·5° C. (97·6° F.) and her respirations numbered twenty-two per minute. The main symptoms were then giddiness, nausea and vomiting. Early in the fourth hour she had a high bowel wash-out and a profuse evacuation, and she had a second one half an hour later. She complained of extreme thirst. Seven and a half hours after the bite she was restless, with pains in the arms, legs and teeth. At the tenth hour she developed bilateral ptosis, with general signs of bulbar affection, including paralysis of the tongue. The pupils were dilated, but reacted to light and accommodation. The limbs were weak and flaccid, but could still be moved voluntarily. The pulse rate was 128 beats per minute, the respirations numbered 40 per minute, and the temperature was 32·3° C. (99° F.). Fourteen hours after the bite the patient was sleeping, but was slightly cyanosed. There was blood pigment in the urine. At this time the pulse rate was 100 beats per minute, respirations numbered 24 per minute, and the temperature was 36·5° C. (97·6° F.). She exhibited strong overaction of the accessory muscles of respiration with increasing cyanosis, and died seventeen hours after being bitten with symptoms of cardio-vascular failure and without developing complete paralysis of the limbs.

Another feature sometimes met with after bites by brown snakes, and possibly by other species also, is a long period of freedom from symptoms after the first twenty-four hours, with death from respiratory failure probably due to paralysis of the diaphragm thirty-six or forty-eight hours or more after the bite.

The Copperhead.—I can find no complete account of the effects of the bite of the copperhead in recent Australian literature. Happily the copperhead is rather sluggish in its habit, and people are only rarely bitten.

In the description of this snake in McCoy's "Prodromus" there is a record of a station master who was bitten by a small copperhead, which he took up after some workmen thought they had killed it. He rapidly lost power in the lower extremities, the pupils became dilated, and he was rescued from deep coma by the intravenous injection of ammonia by Professor Halford.

Observations upon animals indicate that the venom is powerfully hæmolytic and cytolytic in its action, but is without any coagulant effect on the blood. It is a strong neurotoxic poison, and even in sublethal doses may cause paralysis lasting for some days with ultimate recovery. Death usually results from failure of respiration. In poisoning by this venom peripheral circulatory failure plays an important part. In cases of bites by this snake hæmoglobinuria or methæmoglobinuria may be expected to be present, on account of the powerful hæmolytic action of the venom. It is not improbable that deaths attributed to the bite of the black snake (*Pseudechis porphyriacus*) may in reality be due to this species, for it is commonly spoken of as a black snake in many parts of Victoria.

The Black Snake.—The venom of the black snake has a coagulant action like that of the tiger snake. It is the most strongly hæmolytic of the common Australian snake venoms; but despite this action and its cytolytic effect in liberating histamine locally, as was recently shown by Trethewie, the bite is unlikely to be fatal to an adult. The venom is only feebly neurotoxic; and though the bite causes severe symptoms of shock with vomiting, and though red blood cells and blood pigment are present in the urine and hæmorrhages may take place from mucous surfaces, the effects on the central and peripheral nervous system are slight and recovery is the almost invariable result. If the victim is so unfortunate as to be bitten directly into a vein, death may occur from intravascular coagulation. Happily the coagulant principle of this venom and that of the tiger snake are not diffusible like that of brown snake venom.

Other Snakes.—Of the symptoms of the bites of the rarer snakes but little is known. The bite of the ornamental snake produces very characteristic effects: paralysis and coma of extremely rapid onset, with an equally abrupt return to normal. The bite of this small snake, which is not uncommon in Queensland, is rarely observed. The only victim within my knowledge rapidly recovered after a period of paralysis and coma.

The most dangerous snake in Australia (*Oxyuranus scutellatus*) occurs in the most northern portion of Queensland and in New Guinea. These reptiles reach a large size; and since their venom is highly neurotoxic and coagulant and their biting apparatus extremely efficient, the bite must inevitably be attended by a high fatality rate. The symptoms resemble those of tiger snake bite, but the only descriptions available are by laymen, and stress the rapidly fatal result of the bite.

Treatment.

1. The first step in the treatment of snake bite must be taken immediately. If the bite is in a limb a ligature, tight enough to obstruct the flow of arterial blood, must be placed between the bite and the heart, round a portion of the limb which contains only one bone. A thick piece of soft rubber gas tubing makes an admirable tourniquet and should be put on over the clothes to minimize bruising. The ligature delays the entry of venom into the circulation and affords time for other treatment. In the case of brown snake bites it has an additional advantage. It prevents the entry of the coagulant diffusible principle into the blood stream and allows it to act locally like those of tiger snake and black snake venoms. The ligature may be left in position for at least two hours; but after the first half hour it may be necessary to lift it for half a minute or so and allow a little fresh blood to enter the part the blood supply of which has been cut off. This may be done every succeeding ten minutes. At this stage local venesection (*vide infra*) may with advantage be applied.

2. The surface of the bite should be washed with clean fluid; saliva or urine may take the place of water if this is not immediately available.

3. The bite should be excised, or at least cuts should be made, if possible, along the track of the fangs. Excision is applicable only if the bitten person is seen at once, and is useful only if performed within the first few minutes. Acton and Knowles observed that amputation of the tails of monkeys within six minutes after the injection of venom in the tip was effective in saving life; and Hamilton Fairley found that immediate excision saved sheep from death after natural bites of the tiger snake, though many lethal doses had been injected. Excision is not likely to be often practised, as it needs great courage to do it upon oneself. It is not devoid of risk in unskilled hands. It should include all the tissues to the depth of the fang puncture, which is about 0·63 centimetre (a quarter of an inch). In regions where a ligature cannot be applied it is the only immediate treatment available, and the flow of blood from the wound will wash away some of the injected venom. This can also be encouraged by suction, either with the mouth or by dry cupping. In cases in which excision has been performed after application of a ligature, bleeding from the wound may be produced repeatedly instead of using venesection (*vide infra*). To do this a second ligature distal to the first is applied tight enough to obstruct the venous return, but not tight enough to obstruct the arterial flow into the limb. The momentary lifting of the upper ligature washes out some of the venom in the blood which flows from the wound.

4. Local venesection may be applied at any time up to two hours after the bite, but is more efficient the earlier it is performed. It is not worth doing at all unless immediately after the bite an efficient ligature has been placed round the limb and left *in situ*. The method consists in the application of a "venous ligature" distal to the "arterial ligature", and in allowing bleeding to occur from a cut into a vein which drains the region of the bite. When the arterial ligature is lifted blood flows into the limb, and instead of venous blood going into the general circulation it leaves the body taking venom with it. This

procedure of lifting and replacing the ligature may be repeated many times, and in the case of an adult 0·6 litre (one pint) of blood may be allowed to flow.

In experiments on sheep I found that from a quarter to a third of the injected venom could be removed in this way, and that sheep which had received one to one and a half certainly lethal doses of death adder venom, or one to one and a quarter certainly lethal doses of brown snake venom, recovered after this treatment. In the case of children transfusion may be necessary to allow of satisfactory treatment by this method.

5. One kind of monovalent antivenene is available, that prepared by the Commonwealth Serum Laboratories by immunizing horses with tiger snake venom. It is of such high potency that it is useful in treating the bites of most Australian snakes. It is put up in ampoules containing approximately 5 to 7 cubic centimetres of antivenene, an amount capable of neutralizing 15 milligrammes of dry tiger snake venom *in vitro*. Such a dose will neutralize about 11 milligrammes of the venom of the black tiger snake or of the rare *Hoplocephalus bungaroides* and nearly 5 milligrammes of copperhead or taipan venom. It neutralizes only about 1·5 milligrammes of death adder venom, so that in the case of a bite by this snake, effective first aid treatment by ligature and excision is most important and large doses of antivenene would need to be exhibited. The antivenene is without effect in the treatment of bites by brown snakes.

Dr. F. G. Morgan has found that some recent batches of antivenene are even more effective against copperhead and death adder venoms than the sample which gave the results quoted above. One such sample neutralized about half as much of copperhead and a quarter as much of death adder as of tiger snake venom.

After the bite of a large tiger snake two ampoules (3,000 units) should be given intravenously as early as possible, and if, despite this, symptoms develop, a further 1,500 to 3,000 units should be given. If the bite is by a taipan (*Oxyuranus scutellatus*) the initial dose should be at least six ampoules (9,000 units) and if by a death adder eight ampoules (12,000 units) should be given.

It is useless to give antivenene subcutaneously because its absorption is too slow. Before the injection is begun inquiries should be made as to whether the patient suffers from hay fever or asthma and as to whether any injections of horse serum have recently been made. In any case it is wise to test for sensitiveness to horse serum protein. This may be done by giving intradermally 0·1 cubic centimetre of a 1 in 10 dilution of horse serum. If no skin reaction occurs the treatment may be proceeded with at once. If, however, the patient is sensitive to horse serum protein, it is necessary to desensitize him as rapidly as possible. This may be done by the method described by Morgan and myself.[1] A dose of 0·025 cubic centimetre is first given subcutaneously, and at half-hour intervals 0·1 cubic centimetre is given subcutaneously, 1·0 cubic centimetre is given subcutaneously, and 0·1 cubic centimetre is given intravenously. If this last dose causes no general allergic symptoms, the intravenous injection of serum may be given. The serum should be diluted to a strength of 1 in 5 and given very slowly at body temperature. If allergic symptoms occur, the injection must at once be discontinued, and 1·2 milligrammes (one-fiftieth of a grain) of atropine or 0·5 cubic centimetre to 1·0 cubic centimetre of a 1 in 1,000 solution of adrenaline chloride, or both, should be administered hypodermically.

General Treatment of the Snake-Bitten.

The patient should be kept at rest and not allowed to walk about, because exercise increases the circulation and the rate of absorption of venom. He should be kept warm and given plenty of fluid to combat the symptoms of peripheral circulatory failure. Alcohol in large doses is contraindicated, but a small amount may help to allay the patient's fears. The best stimulant is hot black coffee or caffeine. Three milligrammes (one twentieth of a grain) of strychnine are used by many physicians who are experienced in the treatment of snake bite. The use of morphine is said to be contraindicated.

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Reports of Cases.

DESCRIPTION OF TWO HUMAN SPECIMENS WITH CONGENITAL ABSENCE OF THE SPLEEN, ABNORMAL ARRANGEMENTS OF THE GREAT VESSELS, ABNORMAL CARDIAC CAVITIES AND OTHER CONGENITAL DEFECTS.

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CASE I.

Brief History.

THE specimen is a female child weighing six pounds fourteen ounces (about 2·7 kilograms). The mother was a *primipara*, aged twenty-two years, unmarried. Her last menstrual period occurred on October 25, 1938. Labour commenced on August 17, 1939, and was normal. The child was cyanosed at birth and respiration was laboured; it perished forty-three hours after birth.

No external abnormalities were found on post-mortem examination; but when the thoracic and abdominal cavities were opened, it was obvious that some unusual condition was present. The examination was therefore suspended until the body had been injected and preserved for subsequent dissection. No estimations of weights or dimensions were made until then.

Pathological Examination.

Neck and Thorax.

The thyreoid gland is normal in size; it is congested. The thymus is small. The thoracic viscera appear to be in their normal relative positions. The lungs are moderately expanded, but uniformly dark in colour, except for a few lighter areas along the anterior border.

The Heart.

The heart is enlarged and rotated to the right about a transverse axis. It measures 55 millimetres from the base to the apex and 35 millimetres in its transverse diameter. Its outline suggests a *cœur en sabot*. It is larger than the normal heart in a specimen of this age; the enlargement is mainly due to extreme auricular distension. There appear to be two auricles and two auricular appendages. No external evidence of two ventricles is apparent. The coronary vessels stand out because of their large size.

Arteries.—A single large arterial trunk, 11 millimetres in diameter, passes upwards and to the right from the ventricular region of the heart for a distance of 25 millimetres. It then divides into two large vessels. One branch, six millimetres in diameter, proceeds distally from the posterior aspect of the bifurcation, and is therefore not seen until the heart is turned over to the left (see Figure II). This vessel is the descending aorta and lies on the anterolateral aspect of the thoracic vertebræ to the right of the mid-line, eventually continuing into the abdomen, having a normal relation to the diaphragm. It gives off normal intercostal arteries. The other division forms an arched vessel six millimetres in diameter, similar to the arch of the aorta of the normal specimen (Figure I). It thus passes upward and to the left for 18 millimetres and finally turns downward and slightly medially. This distally directed part is short (seven millimetres). When it reaches the upper border of the heart, it divides into a right and left branch; these proceed directly laterally, and are the two pulmonary arteries (Figure IV). The arched part of this vessel has four branches arranged in a right and a left pair, a subclavian and a common carotid artery on each side. Apart

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from this abnormality, the vessels of the neck have a normal arrangement. Passing from the middle of the bifurcation of the two pulmonary arteries, a slender thread of a vessel passes to the posterior aspect of the commencement of the large vessel from the heart. This little vessel is 11 millimetres in length and one millimetre in width. Its further description will be left until the interior of the heart is described.

Veins.—The arrangement of the veins is seen in Figures I and III. The subclavian and internal jugular veins form a superior *vena cava* on each side, which open into what appear to be the corresponding right and left auricles. There are no vessels directly connecting these two venous channels. The azygos venous system appears to have its normal arrangement; the azygos vein itself finally empties into the right superior *vena cava*. The inferior *vena cava* appears normal, emptying into the right auricle. In addition, the right superior *vena cava* collects the two pulmonary veins, which enter it on its posterior aspect near its junction with the heart. The left superior *vena cava* is the only vessel entering the left auricle.

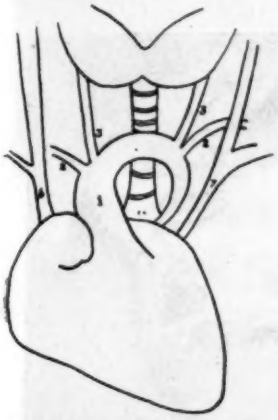

FIGURE I. Diagram of dissection of heart and great vessels seen from the anterior aspect.

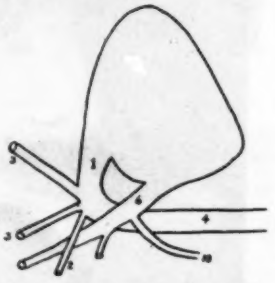

FIGURE II. Heart and great vessels. The heart has been turned over to the left. The numbers indicate the same structures as in Figure I.

1 = arterial trunk, 2 = subclavian artery, 3 = common carotid artery, 4 = descending aorta, 5 = pulmonary artery, 6 = right superior *vena cava*, 7 = left superior *vena cava*, 8 = inferior *vena cava*, 9 = pulmonary vein, 10 = azygos vein.

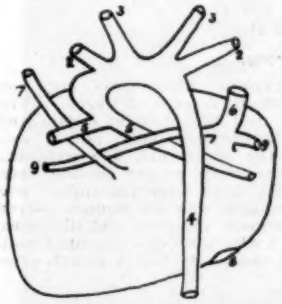

FIGURE III. Posterior view of dissection of great vessels and heart. The numbers indicate the same structures as in Figures I and II.

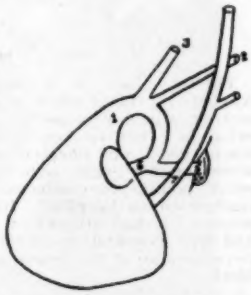

FIGURE IV. Dissection of heart and great vessels with heart turned over to the right. The numbers indicate the same structures as in Figure II.

Auricles.—The cavity of the right auricle, including the auricular appendage, from which it is demarcated by an inconspicuous crescentic fold, has the following dimensions: antero-posterior measurement 28 millimetres, transverse diameter 20 millimetres, vertical measurement 19 millimetres. The interauricular wall is represented merely by a narrow but strong band. This is concave above and below, being four millimetres in width at the centre and widening to 12 millimetres at either end. Its edges are clear-cut, but merge into the anterior and posterior walls of the auricles. This leaves an elliptical opening above and below the band. The upper larger opening is 19 millimetres by 11 millimetres. The lower one is slightly smaller. The lower border of the band arches across the position of the only auriculo-ventricular opening to be seen. This abnormal interauricular wall appears to divide the right auricle from the left auricular appendage. No true left auricle can be seen. This arrangement can be observed in the accompanying photograph.

The right auriculo-ventricular opening is marked by a well-formed ring 20 millimetres by 12 millimetres in size. Across this arches the incomplete interauricular septum. There are three poorly developed cusps which are thickened, incompetent and ill-defined. The left third of the area enclosed by the ring is not patent.

The left auriculo-ventricular opening cannot be seen. In the hypothetical site of this opening the wall is complete, but thin. On the ventricular aspect of this area is a white, scarred, lenticular patch of endocardium. That this corresponds to the thin area described is confirmed when the specimen is examined by transillumination.

Ventricles.—There are two ventricles. The musculature of each is well developed. The cavity of the left ventricle is 16 millimetres deep, 6 millimetres in its transverse diameter and 21 millimetres in its antero-posterior diameter. The right ventricle is 16 millimetres deep, 15 millimetres from side to side and 14 millimetres in an antero-posterior diameter. The right ventricle is thus the larger, but no vessel proceeds from it. The two ventricles are separated by an incomplete septum, which is not in continuity with the interauricular septum, but lies further to the left. It is incomplete; that portion in which the *pars membranacea* is usually found is absent. The opening has a concave lower boundary—that is, the upper border of the septum. The aperture connecting the two ventricles measures seven millimetres by five millimetres. The left ventricle has an opening at its apex, guarded by three cusps, which leads into the large vessel described previously as the only artery coming from the heart. These cusps are semilunar in shape, there being one posterior in position and two placed anterolaterally. The left coronary artery proceeds from the large artery near the posterior cusp and the right coronary artery comes from near the right antero-lateral cusp. The coronary vessels have a normal distribution.

Internal Examination of the Heart and Vessels.—The internal examination of the heart and vessels confirmed the following anatomical points. The left superior *vena cava* opens into the left auricle. The right superior *vena cava* and the inferior *vena cava* open into the right auricle. No vessel leaves the right ventricle; the pulmonary veins enter, not the left auricle, but the right superior *vena cava*. The small, thready vessel connecting the pulmonary bifurcation to the commencement of the single cardiac vessel is patent only in that half near the pulmonary arteries. Its cardiac end is represented by a dimple situated postero-medially to the left coronary orifice.

Abdominal Cavity.

The small gut lies most superficially in the abdomen. The stomach is high up under the left lobe of the liver. There is no trace of greater omentum. The stomach and intestines are normal in shape, but not entirely normal in position, owing to abnormalities in their mesenteric attachments. There is a complete dorsal mesentery from the distal end of the gullet to the commencement of the rectum.

The ventral mesentery of the stomach (gastro-hepatic omentum) is quite normal. The dorsal mesentery of the stomach is normal as far as its attachment to the posterior abdominal wall is concerned, but it is short, shows no redundancy, does not disappear at the pylorus, still contains the pancreas and has no attachment to the large gut.

The duodenum is completely mobile; in other words, its dorsal mesentery is persistent. This is shortest at either end. Its attachment is short—one centimetre in length—and is crescentic, the concavity looking upward and to the left. The upper attachment is to the right of the mid-line. The first and second parts of the duodenum are visible as such. They are in close proximity to the head of the pancreas, but the third part is separated from that organ by the root of the mesentery of the small bowel. Part of the head of the pancreas lies anterior to the second part of the duodenum. The upper border of the commencement of the duodenum is attached to the inferior surface of the liver in the region of the gall-bladder. This attachment is thin and delicate. It contains no blood vessels.

The root of the mesentery of the rest of the small gut has a short attachment (1·5 centimetres). It commences to the right of the mid-line between the third part of the duodenum

and the head of the pancreas. It passes downwards and to the left, ending immediately below the body of the pancreas or the attachment of the dorsal mesentery of the stomach. At this latter point the ileo-caecal junction is attached to the posterior abdominal wall by a short part of the mesentery. The relation of the appendix to the ileo-caecal junction is normal.

The mesenteric attachment of the large gut commences at the point just described. It passes first of all to the left, then downwards as in the normally developed specimen. The rectum and sigmoid colon appear normal, but the more proximal part of the large gut is too long for its mesenteric attachment and forms one long, half-rotated loop, which has its apex in the right flank.

The gall-bladder is 2·8 centimetres long and 1·2 centimetres wide. Its position and appearance are normal. The bile ducts are normal, except that the common bile duct, after receiving one of the pancreatic ducts (Wrisberg), opens into the upper aspect of the first part of the duodenum. The other pancreatic duct (Santorini) enters the medial aspect of the second part of the duodenum.

The pancreas lies in the dorsal mesentery of the stomach, except for a small part of the head which, as was mentioned previously, is anterior to the second part of the duodenum. The pancreas is mobile except where it is related to the duodenum—that is, part of the gastric dorsal mesentery forms the mesentery of the pancreas.

FIGURE V.
Diagram illustrating developmental significance of arterial trunk and branches in Case I: 1 = vestigial vessel representing trunk of pulmonary artery; 2 = right pulmonary artery; 3 = arterial trunk.

No spleen could be seen in this mesentery or in any other part of the abdomen. Microscopic examination failed to reveal any splenic tissue.

The right kidney is 50 millimetres long, its greatest width is three millimetres and its greatest thickness is 25 millimetres. Similar measurements of the left kidney are 45 millimetres, 35 millimetres and 28 millimetres. Both kidneys appear congested, are globular rather than reniform in shape, and show fœtal lobulation. Both suprarenal glands are more medially placed than in the normal specimen.

The uterus and appendages show extreme congestion, as is usual in a newly born child.

Discussion.

1. The great vessels are very abnormal in their development. There is a right, but no left, descending aorta. The disorder of the rest of the large arteries appears to be due to an atresia of the pulmonary artery. The latter designation has been applied to the vestigial vessel passing from the commencement of the aorta to its final bifurcation into two pulmonary arteries. A possible explanation of the developmental significance of the various vessels is suggested in Figure V.

From this viewpoint the descending aorta comes from the right dorsal aorta distal to the fourth branchial artery. The latter vessel is wide and short, and represented by the confluence of ascending aorta, aortic arch, right common carotid artery, descending aorta and right subclavian artery. The right common carotid, external carotid and internal carotid arteries have their usual developmental significance. The left ventral aorta has become the arch of the aorta as far as the left common carotid artery, the left internal carotid artery and the external carotid artery.

The arch of the aorta from the left common carotid to the subclavian artery is derived from the fourth branchial artery. The remaining part of this abnormal arterial freak is apparently formed from a small portion of the left dorsal part of the aorta and the *ductus arteriosus*.

There are two superior *venæ cavæ*. The left vein enters the left auricle. It cannot be determined whether this point of entry would have been included in the right auricle had the interauricular septum been completed by a *septum secudum*. However, it is so far removed from the right auricle that this inclusion does not seem possible.

The pulmonary veins enter the right superior *vena cava*. This accounts for the poor development of the left auricle.

2. The development of the cardiac septa has stopped short at a very early but important stage. It would appear that there has been failure of fusion of the dorsal and ventral endocardial cushions, which occurs in the sixth week of development, dividing the auriculo-ventricular channel. Concurrently with this event the *foramen primum* should close and the ventricular septum should be completed. These have not been accomplished.

It would also appear that the development of the interauricular wall has ceased with the growth of the *septum primum* and the formation of the *foramen secundum*—a very primitive state indeed.

3. The development of the interventricular septum should be such that at an early stage the opening of the *bulbus cordis* is associated with the right side of the ventricular part of the heart. This is not the case in this specimen, so that we cannot be dogmatic about the real significance of the large vessel leaving the left ventricle or the sclerosed narrow channel coming from it.

4. The main disorder in the abdomen is associated with the dorsal mesentery of the foregut. Its main features are a mobile pancreas and duodenum and a failure of splenic development.

FIGURE VI. Photograph of the atria of the heart in Case I.

CASE II.

History.

The specimen is a male infant which was born on August 12, 1940, after a difficult forceps delivery. The mother was a *primipara*. At first the child was limp and exhausted, but its condition improved rapidly, and it was discharged from hospital on the eighteenth day weighing seven pounds eight ounces, the birth weight having been seven pounds four ounces. Six days later the infant was readmitted to hospital. Its weight was six pounds eleven ounces. It had attacks of cyanosis, vomiting and diarrhœa, and was pale and dyspnœic. A diagnosis of congenital maldevelopment of the heart was made. It died a month after birth.

General Description of Heart and Great Vessels.

The heart is enlarged and rotated to the right about a transverse axis. The enlargement is due partly to dilatation of the right auricle, partly to enlargement of the ventricular portion of the heart. It measures 70 millimetres from the base to the apex, 60 millimetres in its transverse diameter. There are two auricular appendages, the left being very small.

Two large vessels arise from the ventricular portion of the heart. The larger of the two, placed anteriorly and to the left, measures 10 millimetres in diameter and is apparently the pulmonary artery. At a distance of 19 millimetres from its origin it is joined by a narrow patent *ductus arteriosus*, seven millimetres in length, and it then divides into right and left pulmonary arteries.

The aorta, arising slightly posteriorly and to right of the pulmonary artery, is seven millimetres in diameter at its origin. It arches slightly to the right upwards and then to the left across the pulmonary artery, to be continued as

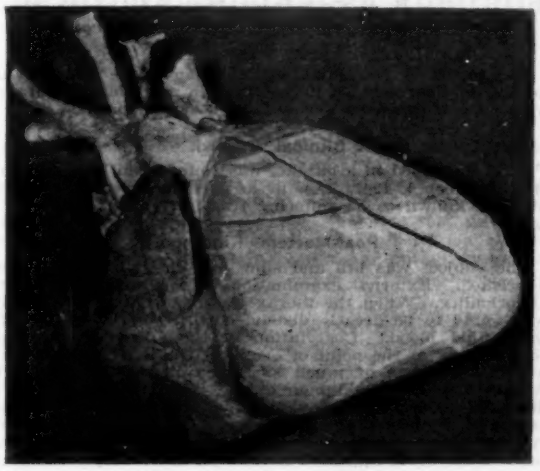

FIGURE VII. Photograph of the heart in Case II from the ventral aspect.

the descending aorta, and gives off the following branches: the innominate artery at a distance of 24 millimetres from the aortic orifice, the left common carotid artery at 28 millimetres, the left subclavian artery at 32 millimetres, the

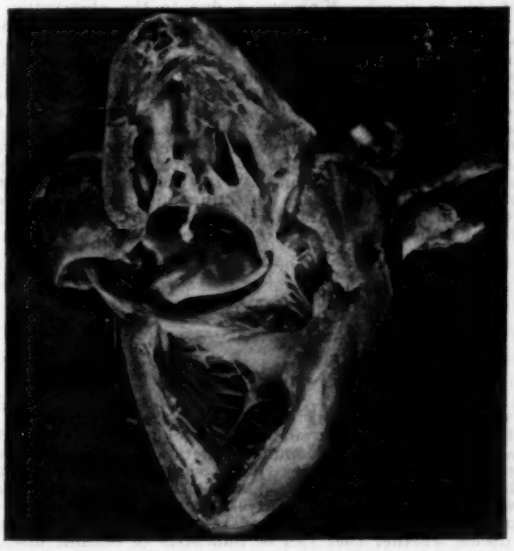

FIGURE VIII. Photograph of the interior of the heart in Case II. The ventricular portion of the heart has been opened and the anterior portion of its wall turned upwards, showing the gap between the defective ventricular septum and the lower border of the auricular septum.

ductus arteriosus at 36 millimetres. The wall of the *ductus arteriosus* is irregularly thickened and its lumen is stenosed but patent. The descending aorta follows the normal course of that vessel.

Veins.

The subclavian and internal jugular veins on the left side unite to form a superior *vena cava*, which opens into the left auricle. The right innominate vein also enters this *vena cava*. Two small pulmonary veins, right and left, also enter this cavity. The azygos vein lies to the left of the aorta and joins the left superior *vena cava*. There is a right superior intercostal vein, which enters the right auricle.

The inferior *vena cava*, the diameter of which is eight millimetres, enters the right auricle on its diaphragmatic surface.

There is thus a complete transposition of the veins of the upper mediastinum.

Right Auricle.

The cavity of the right auricle has the following dimensions: antero-posterior measurement 32 millimetres, transverse diameter 20 millimetres, vertical measurement 25 millimetres.

FIGURE IX. A further stage of the dissection of the heart. A triangular flap including portion of the walls of the ventricle and of the great vessels has been turned upwards. The origin of the pulmonary artery from the left ventricle and of the aorta from the right ventricle is shown.

The interauricular septum is deficient in its lower portion. Anteriorly it is attached to the auriculo-ventricular opening; posteriorly it units with a fold about half-way up the auricular wall, forming an L-shaped arch. The free lower border of the septum measures 20 millimetres; its greatest height is 15 millimetres. The *foramen ovale* is patent, traversed by several narrow membranous strands, and measures 12 millimetres in its longest and 9 millimetres in its shortest diameter.

Left Auricle.

The cavity of the left auricle measures 25 millimetres in a vertical direction, 14 millimetres in a transverse direction and 12 millimetres in an antero-posterior direction.

The L-shaped margin of the interauricular septum arches over the common auriculo-ventricular opening, which measures 25 millimetres in length and 16 millimetres in width. This opening is surrounded by five valves, imperfectly separated from one another and deformed by numerous small sclerotic patches.

Ventricles.

The ventricular portion of the heart is imperfectly divided into two chambers by an incomplete muscular septum, the free crescentic upper border of which is six millimetres below the auriculo-ventricular opening.

The right ventricle forms the greater part of the ventricular portion of the heart, and the whole of the apex. Its greatest length is 45 millimetres (internal measurement); antero-posteriorly it measures 25 millimetres and transversely 25 millimetres. The cavity of the left ventricle measures 20 millimetres in a vertical direction, 12 millimetres in a transverse direction and 12 millimetres in an antero-posterior direction.

The gap between the auricular and ventricular septa is thus a large one; all four chambers of the heart are in communication. The borders of the interauricular and inter-ventricular septa form a skew quadrilateral, crossed by the plane of the auriculo-ventricular opening.

The aorta arises from the right portion of the ventricular cavity, the pulmonary artery from the left.

These vessels, like the great veins, are thus transposed.

The aortic orifice has three semilunar, valvular cusps, one anterior and two postero-lateral. The right and left coronary arteries arise from the aorta near the anterior and left posterior cusps respectively. The coronary arteries follow a normal course. The pulmonary orifice has three semilunar valve cusps showing some sclerotic patches.

Abdominal Cavity: Outstanding Abnormalities.

The abdominal viscera are normal in appearance, with the exception of those structures associated with the dorsal mesentery of the stomach. The dorsal mesogastrium is rather primitive in structure. Its attachment to the posterior abdominal wall is normal, but several other features are unusual. There is no redundancy to produce a great omentum. There is no association of this mesentery with that of the transverse colon. It contains the pancreas, which is entirely that part derived from the hepatic diverticulum. The pancreas is six centimetres in length; it is lobulated and lies entirely in the gastric mesentery, dividing it into a dorsal pancreatic mesentery and gastro-pancreatic omentum. There are no rudiments of splenic tissue.

The duodenum is U-shaped. It possesses a complete dorsal mesentery. This is 2·2 centimetres wide, and is very filmy and transparent. The duodenum is thus quite mobile.

From the distal end of the duodenum to the anus the attachment of the gut is along a straight line anterior to the abdominal portion of the aorta. There are two vessels entering this mesentery, a superior and an inferior mesenteric artery, which correspond in level to those found in the normal specimen.

The whole of the mesentery of the small bowel converges to an attachment of 1·5 centimetres. The rest of the dorsal mesentery is concerned with the large bowel. This part of the gut lies entirely in the left lower quadrant of the abdominal cavity. The ileo-caecal junction is in the left iliac fossa. The appendix is normally situated in relation to the caecum. The large bowel is arranged in a long U-shape. The rectum appears to be normal.

Discussion.

1. Transposition of heart and vessels in the thorax is present to a limited extent. This has affected the cardiac cavities and the venous system. Although the aorta arises from the right ventricle, its subsequent course is normal.

2. It is remarkable that, since all cardiac cavities intercommunicate, the infant showed no obvious signs of congenital cardiac disorder until a short time prior to death. The interauricular septum is slightly more developed than in the first specimen. Some evidence of a *septum secundum* can be seen. Although, again, the dorsal and ventral endocardial cushions have not fused, thus dividing the auriculo-ventricular channel, further valvular development has occurred in this region. It is probably here that the main cause of the maldevelopment of the heart is to be found.

3. Once more an incomplete development of the dorsal mesentery is present, again associated with an absence of splenic tissue.

Acknowledgement.

We wish to thank the members of the honorary medical staff of the Women's Hospital, Crown Street, for permission to describe their cases.

RUPTURED AORTA, COARCTATION OF THE AORTA AND PATENT DUCTUS ARTERIOSUS IN A MAN, AGED TWENTY-ONE YEARS.

By R. CECIL BLACK, M.B., B.S.,
Government Medical Officer, Gympie, Queensland.

THE report by Dr. Hamilton Patterson in the issue of this journal of February 28, 1942, brings to my mind an autopsy which I performed on a youth, aged twenty-one years.

Clinical Record.

K.K., employed in a garage, was found dead in a lavatory on November 4, 1941. As far as I could ascertain, the lad was not known to be suffering from any disability.

Post-Mortem Findings.

The subject was tall and slim, but not noticeably undernourished. External examination of the body revealed no abnormality. When the thorax was opened the pericardium was found to be greatly distended with soft blood clot and some fluid blood. Coarctation of the aorta was present, commencing at the point of origin of the left carotid artery, which itself was of much smaller calibre than the right carotid artery. The lumen of the "coarcted" aorta had a diameter of less than five millimetres. In the posterior aspect of the first part of the aorta there was a longitudinal rupture three centimetres in length. The intima of this part of the aorta appeared normal on macroscopic examination. A patent *ductus arteriosus* was also present. Only slight hypertrophy of the left ventricle was found.

The abdominal viscera were normal.

Comment.

A case of sudden death of a male, aged twenty-one years, is reported. Death was due to rupture of the first part of the aorta. Straining at stool was apparently sufficient to cause the rupture of the vessel, which must have been long subjected to increased pressures due to the obstruction of the narrowed aorta. A patent *ductus arteriosus* was also present.

In conclusion, I should like to mention the case of a girl, aged twenty-one years, who died of a ruptured dissecting aneurysm of the aorta. This case occurred over twelve months ago, and full details escape my memory; but the essential facts are as follows. Her death occurred about twelve hours after the onset of severe pain, which arose while she was ironing clothes. The pain was of the type found in coronary occlusion. At the post-mortem examination it was found that the dissecting aneurysm commenced in the arch of the aorta and extended for six to eight inches before its final rupture.

Reviews.

CARDIAC SYMPTOMS IN THE NEUROSES.

"CARDIAC SYMPTOMS IN THE NEUROSES", by Dr. Doris M. Baker, is a booklet of twenty-nine pages in which the author deals briefly with three common functional cardiac disorders, namely, left inflammatory pain, sighing respiration and palpitation.[1] It is written in simple language and demonstrates very well her objectives: firstly, to determine the significance and importance of these three symptoms and to decide whether they can be indicative of organic disease; secondly, if they appear to be associated with organic disease, to decide what conditions should be excluded before the symptoms can be disregarded; thirdly, to evolve a clinical syndrome which would allow cases with no organic basis to be recognized and treated.

The author rightly stresses the need for thorough and sympathetic investigation of each case. She points out that these symptoms are not imaginary and must not be treated as such; therefore, a full explanation must be made to the patient and relatives to prevent the occurrence of neurotic cardiac fixation.

[1] "Cardiac Symptoms in the Neuroses", by Doris M. Baker, M.D., M.R.C.P. (London); 1942. London: H. K. Lewis and Company Limited. Crown 8vo, pp. 56, with 7 illustrations. Price: 4s. 6d. net.

The Medical Journal of Australia

SATURDAY, AUGUST 29, 1942.

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"ESCAPOLOGY."

IN the opening chapter, entitled: "Portrait of a Man Seeking Hashish", of his very readable travel book, "Away From All That", Cedric Belfrage describes himself as having been trained from the cradle to be an escapologist. He defines an escapologist as a "person who looks the facts of life in the back of the neck, or by sheer force of imagination conjures them out of existence, or runs away from them". Belfrage is not alone in his escapology; as a matter of fact he holds that English people easily lead the world as escapologists and that in England escapology is a ripened tradition. The word escapologist does not appear in either the Oxford English Dictionary or Webster's Dictionary; it is a new creation. The 1929 addendum to the "Concise Oxford Dictionary" states that it is "in journalistic use" and has reference to a "public performer who frees himself when chained or handcuffed, or escapes from closed cells, boxes, sacks" *et cetera*. It was probably Houdini who first induced journalists to use the word, and by now it is well on its way to being received into the English language. If we recognize an escapologist, we have not very far to go before we speak of his performance, or his art if we wish to give it dignity, as escapology. But then it is hard to avoid psychologists and their approach for very long. They speak of an escape from reality and so on; and thus before we know where we are, the escapologist from handcuffs and chains has become an escapologist from fetters of a psychological order.

But what of escapology? To escape or not to escape? To look the facts of life in the face (if facts can have a face), or in the back of the neck? Here is a pretty question. Clearly there are times when to be an escapologist, not necessarily in Belfrage's sense, is not only allowable but necessary. If "The Preacher" were to re-create the book of "Ecclesiastes" today, he would probably, when he wrote that there was a "time to every purpose under the heaven", add to his list: "A time to escape and a time not to escape". The press of life reacts on different men in different ways and on one man not always in the same way. If, like Belfrage in his satire, a man is "trained from the cradle up to be an escapologist", he will most likely go on being one unless somebody or something brings him up with a round turn; if he is cast in a different mould, he will meet facts face to face. But not always. His nervous system may let him down or his liver hold him up; in these circumstances the nervous system must be rested or the liver stimulated. But let us look at this in more detail.

A moment's thought will show that the division is very uneven—the "time to escape" does not come nearly so often and incidentally is not nearly so important as the "time not to escape", but it is harder to define. Unfortunately many persons are escapology addicts without being fully alive to their addiction, and this is the worst feature of the event. It is seen every day in our home life, in professional life and in national life. A man, for example, will refuse to see himself as he really is in relation to his family and his fellow men—he looks the facts anywhere but in the face. Perhaps he is the product of his father's family before him, and he moves along his narrow rut of life, complacently respectable, sublimely ignorant of any failure in himself, gaining his living, if he can manage it, at the sweat of other people's brow rather than his own. He may even be identified with communal good works and scorn to forsake the assembling together of the benevolent. He persuades himself, maybe, that he is giving his children the best, the very best, of educations, while keeping them untainted from the strange ways of lesser folk. Were his eyes open, could he be honest with himself, he might see himself as he really is—a selfish and rather soulless creature whose only interest in his fellow men lies in the use he can make of them or in the adulation or approval they may give him, but always from a distance, unless they are in what appears to him to be a higher social stratum. In professional or business life strong facts are often conjured out of existence or have such a limelight of tradition, of wishful thinking or of unconscious deception shed on them that they cannot be recognized for what they really are. Medical practitioners are thought to be comforted and sometimes distended with satisfaction when they hear Madame Cliché talk of the nobility of the practice of medicine and there are even said to be some who revere the memory of Robert Louis Stevenson for the nice things he wrote about doctors. Much is talked and written of the service given by practitioners of medicine to the community, of the honorary work done at hospitals, of attendance on the needy without thought of recompense, of new discoveries promulgated that all may benefit from them. These claims are true, these things are done and the doing of them is honourable. What the medical practitioner needs to do is to inquire in the secret chambers of his heart into his motives. Motives are not easy to determine, chiefly because they are nearly always mixed; however much he may desire so to be, it is more than a little difficult for any man to be honest with himself about them. Motives are apt to be forgotten, the path of least resistance soon looks like the right path, the way of the escapologist is easy. In national life escapology reaches its fullest manifestations; it is almost like an hysterical amaurosis of the herd and is bred of slack living, luxury and *laissez-faire*. Every Britisher today who uses his brains must realize how the nation refused to face facts staring it in the face before this war descended on the world. Every member of the herd must take some share of

national blame and so every member has to take his share in the "escape from escape".

Since it is clear that any man may join the ranks of the escapologists simply by drifting into them, it is the easier to determine when to escape and when not to escape. If a man is to be worthy of his calling, he must always look the facts of life in the face. In private life, in professional life, in national life it is all the same. Since readers of this journal are almost all medical practitioners, emphasis should be laid on the professional life and on the objectives of the calling of medicine—the relief of suffering humanity and the prevention of disease. But the war and the evil following in its train make us all think more of our national aims—the conquest of the enemy and the founding of a saner and therefore a healthier and a happier society. Both professionally and nationally our objectives must always be in view; in this sense we must abandon escapology and all its accompaniments. Douglas Reed in "A Prophet at Home" writes that "release", "escape", "dope", "opium" are idols. He prefers ideals—"effort, exertion, enthusiasm, and above all no escape, but to look at unpleasant things, not pretend they aren't there . . . but to look at them and think how to change them and get rid of them". We should share his preference. Escape of two kinds there may be; one is essential, the other permissible. The one is the escape from any fetters that would hinder us in our striving; the other is an escape in the sense of a conscious relaxation of effort, a rest and a refreshment that energies may be renewed, vision clarified and an ever stronger effort made.

Current Comment.

THE RELIEF OF BILIARY COLIC.

For the most part we have been content to believe without question that because morphine usually relieved the pain of biliary colic it also relieved the spasm of the sphincter mechanism of the biliary ducts. This belief was shown to be erroneous by W. L. Butsch, J. M. McGowan and W. Walters.[1] This intriguing fact has been confirmed and many interesting points have emerged from George S. Bergh's experimental study[2] of the sphincter mechanism of the common bile duct in human subjects and of its reactions to certain types of stimulation. In patients in whom the common bile duct had been intubated Bergh measured the pressure necessary to overcome the resistance of the sphincter before and after the administration of certain foods and drugs. The results obtained in these patients cannot be directly translated to physiology of normal persons, for in each of his patients there was some local pathological change necessitating the insertion of the choledochostomy tube. Nevertheless, it is just these patients to whom it is often necessary to administer drugs for the relief of pain, and hence the results obtained from them are more important from the clinical point of view than would be results obtained from normal patients. If it were possible to study normal patients alone then the opposite argument would apply and the results would be of less value. Changes of a few millimetres in the intraduct pressure occur during respiration, and marked changes occur during coughing, laughing or vomiting as a result of a temporary increase in the intraabdominal pressure.

The effect on the sphincteric tone of various types of foodstuffs were studied by Bergh. A meal containing egg yolk was found to be a very potent factor in causing relaxation of the sphincter, whereas the effect of a protein meal was less, and practically no change in sphincteric tone followed the administration of olive oil, a carbohydrate meal or of a 10% glucose solution given intravenously. As Bergh pointed out, these observations might have been anticipated and may be correlated with the well-known facts concerning the effects of food upon the gall-bladder. Fats produce the greatest contraction of the organ, proteins rank next, and carbohydrates are practically ineffective in causing gall-bladder contraction. Bile and bile salts are powerful cholagogues, but in Bergh's patients the effect produced by these substances on the sphincteric mechanism was variable.

That morphine produces contraction of the sphincter of Oddi of guinea-pigs and rabbits was demonstrated first by Reach in 1913. As mentioned above, Butsch, McGowan and Walters later showed that morphine produced the same effect in man. In Bergh's patients the administration of morphine sulphate in subcutaneous doses of one-twelfth to one-sixth of a grain gave rise to a prompt and prolonged increase in sphincter tone which persisted for more than two hours. A few cases in which biliary colic was precipitated by the exhibition of morphine have been reported and are probably explained by the occasional predominance of the spasmodic effect over the more usual anodyne effect. Codeine in doses of one grain, administered subcutaneously, produced a prolonged contraction of the sphincter; but the elevation of the sphincteric tone was not so great as nor so swiftly produced as in the case of morphine. "Pantopon" (a mixture of the isolated alkaloids of opium in their natural proportions) and "Dilaudid" produced effects almost exactly like those of morphine.

Relief from biliary colic after the administration of nitroglycerin has been reported by a number of clinicians, but unlike morphine, nitroglycerin caused relaxation of the sphincter mechanism which was maintained for fifteen to sixty minutes. Similarly, amyl nitrite lowered an elevated intrabiliary pressure. This had also been previously demonstrated by Butsch, McGowan and Walters. These authors found that amyl nitrite was effective whether the elevated pressure was spontaneous or the result of a previous injection of morphine. If pain was associated with the elevated pressure it was relived by the amyl nitrite. Occasionally, however, Bergh found that in the presence of a spastic sphincter relaxation and the relief of pain did not occur following the use of this drug; and his clinical experience supplemented this observation, for he had noticed that many cases of biliary colic could not be relieved by amyl nitrite.

Following Meltzer's original suggestion, Lyons and many others have performed biliary drainage by introducing magnesium sulphate into the duodenum. The flow of bile thus induced is at first light yellow, but later becomes darker and more viscid (probably concentrated bile from the gall-bladder). From a study of the intrabiliary pressure Bergh showed that a dose of 12·5 grammes of magnesium sulphate may produce upon the sphincter of the common bile duct in man any one of four types of effect. It may cause relaxation with or without an initial contraction, it may cause an initial contraction followed by a return to the original tonus level, or there may be no effect. Sphincter relaxation occurred 33 times in a series of 42 observations. The relaxation, however, was usually preceded by a temporary increased intramural resistance. Bergh concluded that contraction of the gall-bladder following the administration of magnesium sulphate probably is more important than sphincter relaxation in producing a flow of bile into the duodenum in patients with a functioning gall-bladder.

The effects of the many other substances studied by Bergh on the biliary tract were either insignificant or very variable. These substances included atropine, pilocarpine, posterior pituitary extract, benzedrine, prostigmine, caffeine, sodium benzoate, sodium dehydrocholate, histamine, epinephrine, ephedrine, calcium gluconate, calcium chloride and ethyl alcohol.

The chief points which emerge from Bergh's investigation are that morphine will usually relieve the pain of biliary colic, but often without relieving the sphincteric

[1] *Surgery, Gynecology and Obstetrics*, Volume LXIII, 1936, page 451.
[2] *Surgery*, February, 1942.

spasm; in cases of biliary colic in which morphine is ineffective in relieving the pain, amyl nitrite or nitroglycerin should be tried. There would seem to be no benefit to be derived from the administration along with the morphine of a drug such as atropine which is without a significant effect on the sphincter mechanism. Nitroglycerin, in doses of one one-hundredth of a grain placed under the tongue, relieved both the pain and the spasm of biliary colic, and it is apparent that a more extensive clinical trial of this drug in the treatment of biliary colic is indicated.

ACUTE LEUCHÆMIA IN CHILDHOOD.

IN considering the causes of disease it is well to remember that external evidence may be as important as internal. The advances of clinical pathology and the availability of laboratory services and other aids to diagnosis favour intensive study of individual patients and the publication of articles in which one or perhaps a small number of cases are studied in meticulous detail. Information no less useful may be obtained by an approach that is telescopic rather than microscopic, and this method of a wide survey has been followed by Jean V. Cooke in a study of the incidence of acute leuchæmia in children.[1] It is known, of course, that the acute forms of leuchæmia are far more common in children than in adults and that younger children are more frequently affected than older ones. Almost all published reports deal with relatively small groups of one hundred cases or more; the only series of sufficient size to allow an age incidence analysis is that reported by Ward, who collected 729 cases of all varieties of leuchæmia, in 398 of which the condition was classed as acute. Ward did not state the source of his cases and Cooke thinks it likely that many were taken from published accounts and were therefore, in a sense, selected. Cooke's own report is based on the analysis of the age and sex incidence of 1,500 patients suffering from acute leuchæmia who were admitted to 33 children's hospitals or pædiatric services in the United States and Canada during a period of some years. A list of these hospitals is given. Some older files were not considered trustworthy and were not used, but in every instance the figures represent successive admissions for the disease over consecutive years, and can therefore be considered as representative of an unselected group as far as age and sex incidence are concerned. All forms of acute leuchæmia were included.

In regard to the sex incidence, 59·3% of the entire group of patients were males, the predominance of boys being greater in later childhood than during infancy. The age incidence is interesting. It follows a regular curve, rising from a moderate elevation in the first two years of life to a peak of highest incidence in the third and fourth years, with a sharp decline in the next three years and a more gradual and progressive fall throughout the latter half of childhood. Of all cases 40% occurred in the period from three to five years and almost half occurred in the period three to six years. The question arises whether this incidence has a bearing on the cause of acute leuchæmia. Cooke believes that it has and her reasoning is as follows. She states, first that there are two schools of thought about acute leuchæmia, one regarding it as neoplastic, the other holding that it is of infective origin. So far as a comparison with malignant neoplasm is concerned, this is rare before puberty and there is no accurate evidence about age incidence. Theories of the infective origin of acute leuchæmia may be divided into two types. The first is that the disease is due to a specific acute infective agent, but there is little or no evidence for this. The second assumes that the relation to acute infection is of a less specific character and that many types of infection may initiate, in susceptible persons, the changes that result in acute leuchæmia (leuchæmia is relatively rare, and infections are common; one must therefore assume a constitutional inferiority of the hæmopoietic system in susceptible individuals, or perhaps an impairment due to malnutrition). Further, it is relatively common to obtain the history that immediately preceding the development of symptoms of acute leuchæmia the child suffered from some acute infective illness from which he had apparently recovered. The crux of Cooke's argument is a comparison of the relative age incidence of acute infections and acute leuchæmia in childhood. Most clinicians will agree that respiratory infections have their greatest incidence and severity in infancy and early childhood. Two other common enemies of childhood are diphtheria and the more serious forms of measles. The incidence curve of these can be studied from records of hospital admissions. An age incidence curve compiled from 7,379 cases of measles and 3,311 cases of diphtheria, representing admissions to the Willard Parker Hospital during the five-year period of 1919 to 1923, closely resembles the author's age incidence curve of acute leuchæmia. Her final conclusion is that acute infections form one of the factors in the production of acute leuchæmia. It must be admitted that the argument rests on probability rather than on proof. Still there is much to be said for her approach to the problem, by way of a wide view and hard thinking. Certainty can come only by the keeping of thorough records of the history and background of every sufferer from this most baffling and tragic disease.

[1] *The Journal of the American Medical Association*, June 13, 1942.

MYELOSCOPY: INTRASPINAL ENDOSCOPY.

MANY clinicians will be surprised to read of Lawrence Poole's description of myeloscopy.[1] The study of the various cavities of the body by means of an increasing variety of endoscopes has been gradually accepted by the profession and also, but less willingly, by the patients; but it is rather unexpected that it should be possible to examine the spinal cord and its coverings by such an apparatus. The arrangement of the vertebræ, ligaments and muscles about the cord are sufficiently complex to render the simple procedure of lumbar puncture one that requires attention to detail in its performance. From the anatomical standpoint it was therefore necessary for an intraspinal endoscope to be both strong and fine, factors which increase the technical difficulties in the manufacture of such an instrument. Nevertheless, once these difficulties have been overcome, the value of such an instrument in experienced hands is apparent, especially in some cases in which laminectomy is indicated or in which the diagnosis is in doubt. According to Poole, the abnormal lesions recognizable by myeloscopy include varicose vessels, arachnoid adhesions of post-traumatic or inflammatory origin, neoplasms, inflamed nerve roots associated with clinical neuritis, and the effects of a herniated *nucleus pulposus* or hypertrophied *ligamentum flavum*. Excellent drawings are included in his article to illustrate these conditions. Although none of these lesions are common, the chief advantage of the procedure of myeloscopy would seem to be in the occasional case in which these conditions are included in the differential diagnosis and in which they cannot otherwise be excluded except by laminectomy or by lipiodol injection (a simple procedure which is sometimes associated with troublesome sequelæ).

In the past the exponents of spinal anæsthesia have exhorted clinicians to use fine lumbar puncture needles in order that leakage of cerebro-spinal fluid through the hole in the coverings of the cord and the interspinal ligaments should be minimal, for it has been said that this leakage is a potent factor in the ætiology of post-spinal anæsthetic headaches. This point is remarked upon by Poole, who has noticed that the incidence of post-myeloscopy headaches has been no higher than after an ordinary lumbar puncture despite the fact that considerable amounts of cerebro-spinal fluid are sometimes lost in his cases. Poole has been able, however, to demonstrate that this leakage of cerebro-spinal fluid into the tissues does occur. When myeloscopy was performed within a few days of an ordinary lumbar puncture large collections of epidural fluid were frequently revealed.

[1] *Surgery*, Volume XI, February, 1942, page 169.

Abstracts from Medical Literature.

PATHOLOGY.

Pathogenesis of Cholecystitis.

NATHAN A. WOMACK AND EUGENE M. BRICKER (*Archives of Surgery*, April, 1942) state that considerable confusion exists at the present time as to the pathological and the physiological mechanism involved in inflammatory processes in the gall-bladder. These difficulties have been reflected in the wide divergence of opinion regarding the treatment of these inflammatory processes in various stages. In an attempt to approach a better understanding of the subject by experimental and clinical analysis of the pathological factors involved, the authors present experimental evidence that in dogs complete obstruction of the cystic duct does not produce inflammation of the gall-bladder wall if the imprisoned bile is replaced by physiological solution of sodium chloride. Complete obstruction of the cystic duct by which bile is left imprisoned in the gall-bladder, results in inflammation, the severity and type of which are in direct proportion to the content and the concentration of the bile obstructed. This inflammation is identical with that encountered in clinical cholecystitis. Evidence is submitted to show that this inflammation is produced by the direct action of bile on tissue and that bile and its components can be demonstrated at times in the wall of the gall-bladder in cases of human cholecystitis. Bacterial infection may or may not be present. While bacterial infection may at times be of great clinical importance, from the standpoint of pathogenesis it should be considered as a complication that results when contaminated tissue is injured.

Intercapillary Glomerulosclerosis.

ROBERT C. HORN AND HANS SMETANA (*The American Journal of Pathology*, January, 1942) have reviewed the autopsy records of 550 patients with *diabetes mellitus*, arteriolar nephrosclerosis, generalized arteriolar sclerosis and glomerulonephritis. Among them, 87 instances of intercapillary glomerulosclerosis were found. In its advanced form, this condition was always associated with *diabetes mellitus*, and was present in 58·1% of the cases of diabetes with arteriolar nephrosclerosis. Less severe degrees of glomerulosclerosis were found with equal frequency in cases of arteriolar nephrosclerosis without diabetes, and somewhat less often in cases of generalized arteriolar sclerosis and glomerulonephritis. One additional instance was encountered in a case of cirrhosis of the liver without diabetes, renal disease or generalized vascular disease. Sclerosis of renal arterioles has been found to be invariably associated with intercapillary glomerulosclerosis.

Sclerosing Hæmangiomata of the Central Nervous System.

THE neoplasms of blood-vessel origin in the central nervous system have been divided into two groups: the hæmangioblastomata, arising in the brain substance and by far most frequently in the cerebellum; and the so-called angioblastic meningiomata. The presence in tumours of both groups of phagocytes containing fat and hæmosiderin as well as of neuroglia has tended to set them apart from hæmangiomata outside the central nervous system. A study by Orville T. Bailey and Richard Ford (*The American Journal of Pathology*, January, 1942) of a series of hæmangioblastomata of the brain substance indicates that they may undergo a process of sclerosis entirely comparable to that found in hæmangiomata of the skin and other organs. The sclerosis comes about by an increase in stroma, in large part collagenous connective tissue, but in part neuroglia. In other words, both mesodermal and ectodermal supporting tissue participates in the process. The occlusion of blood vessels resulting from the increase in stroma is accompanied by an accumulation of lipoid material and hæmosiderin in phagocytic cells of endothelial origin. Since the sclerosis may be absent, slight or marked, many apparently different tumours may be shown to have a common origin. The so-called angioblastic meningiomata are hæmangiomata of the meninges in which a similar process of sclerosis has occurred. These tumours infiltrate the brain to some extent; in this way, neuroglia comes to participate in the progressive tissue changes occurring in the hæmangiomata of meningeal origin. There is no fundamental difference between the two groups of tumours usually called hæmangioblastomata of the brain and angioblastic meningiomata. They are both sclerosing hæmangiomata of the central nervous system. The recognition of these sequences in hæmangiomata of the brain and its coverings has a bearing on the operative management of the lesions. The study of the progressive tissue changes in sclerosing hæmangiomata of the central nervous system has been facilitated by observation of similar changes in hæmangiomata of the skin and other organs. This is one of the many instances in which a lesion apparently unique to the brain can be shown to have its exact counterpart in lesions of other viscera when account is taken of the differences in the normal structural patterns of the organs concerned.

Influence of Sodium Bicarbonate in the Prevention of Renal Lesions from Massive Doses of Sulphathiazole.

IN a paper previously abstracted in these columns Climenko and Wright have shown that the administration of ten times the usual therapeutic doses of sulphapyridine or twenty times the usual doses of sulphathiazole for long periods leads to the appearance of typical lesions in the kidneys of laboratory animals. In the case of sulphathiazole they consist of a series of acute inflammatory reactions around acellular foci which, under *in vivo* conditions, contained crystals of the precipitated drug. Most of the animals died in the course of these experiments. The same authors in collaboration with Barlow (D. R. Climenko, O. W. Barlow and A. W. Wright, *Archives of Pathology*, December, 1941) show in another paper that it is possible to prevent fatalities and also to inhibit the formation of the multiple local inflammatory lesions in the kidney by the administration of sodium bicarbonate. This action of bicarbonate can be accounted for by the fact that both sulphathiazole and its conjugated derivative acetyl-sulphathiazole are many times more soluble in alkaline media than they are in acid media and that the maintenance of an alkaline urine prevents precipitation of the drug in the kidney and thereby prevents formation of the local lesions.

Testicular Biopsy.

TESTICULAR biopsy is an innocuous procedure, no more disabling, according to Charles W. Charny and David R. Meranze (*Surgery, Gynecology and Obstetrics*, April, 1942), than a Rubin test in the female, and should be established as a routine procedure in the study of male infertility. The failure of tubular development is indicated histologically by the presence of small tubules which are filled with undifferentiated cell forms. Peritubular fibrosis is not present. Degenerative lesions, if acute, are recognized in testicular biopsies by the presence of necrosis and desquamation of the tubular epithelium. If the lesions are of long standing, peritubular fibrosis is a distinct feature and signalizes either the end stage of an inflammatory process or the replacement fibrosis which results as a consequence of shrinkage of the tubules. The presence of peritubular fibrosis suggests severe damage to the youngest epithelial cells of the tubules, probably affecting their regenerative potentialities. The administration of sex hormones, either stilbœstrol or testosterone propionate, induces tubular degeneration both in the hypersexual male and in the hypogonad. The majority of male patients with relative infertility have no endocrine disturbances. Their semen deficiencies are the result of degenerative lesions of the seminiferous tubules caused by either regional or constitutional inflammatory or toxic processes. Endocrine therapy is not indicated in such instances.

The Histogenesis of Ovarian Mesonephroma.

WALTER SCHILLER (*Archives of Pathology*, April, 1942) scrutinizes the criticism which has been levelled against his interpretation of certain ovarian tumours as mesonephroma. (See "Current Comment" in this journal, Volume I, 1942, page 664.) He thinks that his critics have not given an adequate explanation for the specificity of the tumour in the ovary or for the specific glomeruloid structure of the tumour. He still feels that this structure is a characteristic and typical one. It consists of a small cavity lined with endothelial cells which eventually become cuboid or low columnar. This structure never presents more than one papillomatous projection with one capillary loop in its centre covered by endothelial or more frequently by cuboid or low columnar cells. The similarity to a fœtal glomerulus is striking. It can be overshadowed by neoplastic proliferation of one, in general the inner, or both linings, but the outlines of the structure, the small cavity with one capillary tuft, never change and are duplicated neither by the papillomatous projections in endothelioma or in epithelial cystoma nor by perithelioma. In epithelial papilloma the cavities are much larger and contain numerous papillary projections, most of them ramifying into smaller

branches. In these projections the stroma is well developed and the vessels are small. In mesonephroma there is one projection in a small cavity with little stroma, which, in general, forms only a thin layer between the capillary wall and the covering endothelium. It never presents any ramification, nor is there ever more than one projection. In perithelioma the single vessel is surrounded by a dense coat of proliferated perithelial cells, which completely replaces the perivascular lymph space. The characteristic small cavity around the capillary tuft, which is never missing in mesonephroma, is not found in perithelioma, and the reconstruction of a tumour of that type shows longitudinally stretched vessels and never short loops or tufts. If the glomeruloid structure were an organ-unspecific perivascular mantle, developing from the perivascular lymph endothelium, we should expect to find the glomeruloid structure in tumours of all organs which contain vessels, in other words, in tumours of practically all organs. But it is found only in the endothelioma-like group of the ovarian tumours. This fits the conception of a developmental misplacing of mesonephric tissue into the field of the adjacent gonad, which may occur in either sex. As additional proof for his conception, the author goes on to describe a renal tumour in a man of fifty-two years of age which microscopically presented structures analogous to the glomeruloid units of ovarian mesonephroma.

MORPHOLOGY.

Absence of the Inferior Vena Cava.

R. A. HUSEBY AND E. A. BOYDEN (*The Anatomical Record*, December, 1941) give an account of a rare anomaly, namely, complete absence of the hepatic position of the inferior *vena cava* with bilateral retention of the supracardinal system. The venous blood of the legs and trunk drained into two post-renal *venæ cavæ* which terminated above in normal azygos and hemiazygos systems without any connexion with the liver. The anomaly is interpreted as a bilateral persistence of the supracardinal system of veins, following early failure of the right subcardinal to anastomose with the hepatic circulation and the subsequent atrophy of the connexions between the two subcardinal veins. The specimen represents at least the fifteenth case of its kind, but is unique in the completeness and symmetry with which the supracardinal system has been retained.

Distant Neuroanatomic Complications of Spina Bifida.

B. W. LICHTENSTEIN (*Archives of Neurology and Psychiatry*, February, 1942) states that in many instances anomalies, particularly neural in nature, belonging to the *spina bifida* group of disorders, occur unassociated with evidence of any bony defect. In many instances of *spina bifida* there is abnormal fixation of the spinal cord which prevents its adequate rostral migration with continued development. This abnormal fixation in some cases results in a variety of neuroanatomical alterations in distant parts of the nervous system. The author gives an account of these including: short *cauda equina* and low-lying *conus medullaris*; abnormal stretching of the spinal cord above the site of fixation; elongation of the hind-brain so that the *medulla oblongata*, choroid plexus of the fourth ventricle and even parts of the cerebellum may be found in the vertebral canal; stenosis of the aqueduct of Sylvius; internal hydrocephalus due to stenosis of the aqueduct of Sylvius and to impaction of the hind-brain in the *foramen magnum*, deformity of the *medulla oblongata* and of the hind-end of the fourth ventricle; hydromyelia of the uppermost cervical levels of the spinal cord; syringomyelic-like cavitation in the cervical portion of the spinal cord; pressure on the anterior spinal arteries and the vertebral system of veins at the *foramen magnum*. Several figures are given.

Circulation of Blood through Liver Lobule.

K. G. WAKIM AND F. C. MANN (*The Anatomical Record*, February, 1942) used the quartz-rod transillumination technique to determine the distribution and manner of communication of arterial, portal and hepatic venous blood within the intact liver of living animals. They record the following observations. The intrahepatic circulation manifests intermittent rhythmicity of irregular occurrence. About 75% of the hepatic circulation is in an inactive state under ordinary conditions when the liver is not under the influence of either excitatory or inhibitory agents. The liver has a great functional reserve in the activity of its vascular systems. The inactive sinusoids seem to go through two phases—a storage phase during which the sinusoids are packed full of motionless blood cells, and a non-storage phase during which the sinusoids have scarcely any blood cells in their potential lumina. This suggests a blood storage function of the liver. In the amphibian as well as in the mammalian liver the branches of the hepatic artery supply the hepatic parenchyma with arterial blood by emptying directly into the sinusoids of the lobules, by emptying into the radicles of the portal vein before the latter empty into the sinusoids, or by anastomotic communications between the interlobular branches of the hepatic artery and of the portal vein. Mixed arterial and venous blood enters the sinusoids of the lobules beyond these arterio-venous anastomoses. In the amphibian as well as in the mammalian liver, arterio-venous anastomoses were found between corresponding interlobular branches of the hepatic artery and those of the portal vein.

Post-Natal Changes in the Human Pyramidal Tract.

A. M. LASSEK (*Archives of Neurology and Psychiatry*, March, 1942) states that the fibres of the pyramidal tract undergo the following post-natal changes. Early in life all the axones are apparently present and are small, delicate, uniform in calibre, crowded and possibly of a different chemical nature than when mature. During this period they may be non-functional and vulnerable to small lesions. At eight months of age, when voluntary movements are attempted, certain fibres commence to expand at a more rapid rate than others. Individual growth continues, until at two years of age the pyramidal tract simulates in miniature that of an adult. At twenty-two years of age the pathway possesses a few large, more medium and many minute axones. In senility, on the basis of observations on one specimen, there is a decrease in number and diameter of fibres. It seems reasonable, also, to conclude from the study that integration of the pyramidal tract occurs through morphological and chemical changes in both the axones and the myelin sheaths rather than in the latter alone and that different physiological motor states may be explainable, in part at least, on a neuroanatomical basis.

Differential Staining of Sympathetic Post-Ganglion Fibres.

J. F. NONIDEZ AND K. HARE (*Journal of Comparative Neurology*, February, 1942) state that in tissues fixed in chloral hydrate and then stained in silver, it was found that the axones of post-ganglionic sympathetic neurones give a paler staining reaction (yellow or light orange) than other axones, namely, preganglionics and afferents, which invariably stain a much darker colour. This techniques gives promise of being of considerable value in tracing origins and connexions in the autonomic system. The article is illustrated with several figures.

Posterior Column Fibres in Cord of the Monkey.

A. E. WALKER AND T. A. WEAVER (*Journal of Comparative Neurology*, February, 1942), by means of the Marchi technique after posterior root sections in 22 macaque monkeys, mapped out in cross-sections at different levels in the spinal cord the positions and relations of ascending root fibres from different levels, and identified their exact site of termination in the gracile and cuneate nuclei in the medulla. Fibres from each root are not collected in separate compartments, and there is much over-lapping of fibres from adjacent roots. Several clear figures are given.

Origin of the Neural Crest.

J. L. CONEL (*Journal of Comparative Neurology*, April, 1942) gives an account of observations made on a series of embryos of *Bdellostoma stouti*. He states that the neural crest arises as an evagination of the dorsal part of the alar plate of the medullary folds or tube. This process of evagination occurs in a cephalocaudal direction, the optic vesicle being the first part to appear. In early stages the evagination is a hollow pouch whose cavity is continuous with the cavity of the medullary tube and whose wall consists of a single layer of cells continuous ventrally with the epithelium of the medullary tube and dorsally with the ectoderm where the tube is still open. Where the medullary tube is closed the ganglionic evaginations of the two sides fuse across the mid-dorsal line. The optic vesicle and the ganglionic vesicles of the cranial and spinal nerves arise in the same manner from the dorsal part of the alar plate and are, therefore, homologous structures in respect to origin. The primary attachment of each cranial or spinal ganglion with the dorsal surface of the alar plate disappears and a secondary attachment is established with the lateral surface of the alar plate by means of fibres which grow from the ganglion into the medullary tube.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the South Australian Branch of the British Medical Association was held at the lecture theatre of the Institute of Medical and Veterinary Science, Adelaide, on June 25, 1942, DR. R. J. VERCO, the President, in the chair.

Annual Report of the Council.

The annual report of the Council for the year ended June 30, 1942, was adopted on the motion of Dr. A. F. Stokes, seconded by Dr. Gilbert Brown. In moving the motion, Dr. Stokes congratulated the members who had received honours and regretted that the name of Dr. T. G. Wilson, C.M.G., had been omitted. He also referred to the large number of members who were on active service and drew attention to the fact that some provision would have to be made for the establishment of post-graduate courses after the war. The report is as follows.

At the annual general meeting, held on June 26, 1941, officers and members of the Council were elected as follows:

President: R. John Verco.

Vice-President: C. F. Drew.

Honorary Treasurer: P. T. S. Cherry.

Honorary Medical Secretary: John L. Hayward.

Ordinary Members: D. R. W. Cowan, M. Erichsen, H. M. Jay, R. J. deN. Souter.

Owing to the election of Dr. Verco for another year as President, it was necessary under the rules to appoint another vice-president, there being no immediate past president, and Dr. C. B. Sangster was appointed last June to that office. Upon the election of Dr. Sangster, Dr. J. A. Rolland, who had retired as an ordinary member, was elected until June, 1942, in order to complete the constitution of the Council. At the Council meeting, held on July 3, 1941, the following subcommittees were appointed:

Scientific: D. R. W. Cowan, H. M. Jay, C. B. Sangster, J. S. Verco, R. John Verco.

Contract Practice: D. R. W. Cowan, M. Erichsen, E. A. H. Russell, A. F. Stokes, R. J. deN. Souter.

Ethical: M. Erichsen, J. L. Hayward, H. M. Jay, L. R. Mallen, E. A. H. Russell, A. F. Stokes.

Parliamentary Bills: D. R. W. Cowan, M. Erichsen, Sir Henry Newland, A. F. Stokes.

Library: H. M. Jay, Sir Henry Newland, C. B. Sangster, J. S. Verco.

The President, the immediate Past President (if any), the Vice-President or Vice-Presidents, the Honorary Treasurer, and the Honorary Medical Secretary are *ex-officio* members of all committees.

Attendance at Council and Subcommittee Meetings.

	Council.	Scientific.	Contract Practice.	Parliamentary Bills.	Library.
Dr. P. T. S. Cherry ..	5	1	1		
Dr. D. R. W. Cowan ..	9	1	5	3	
Dr. C. F. Drew	12	1	4		
Dr. M. Erichsen	11		5	1	
Dr. J. L. Hayward ..	9	1	2		
Dr. H. M. Jay	11	2			1
Dr. L. R. Mallen	12				
Sir Henry Newland ..	10			3	2
Dr. E. A. H. Russell ..	10		5		
Dr. J. A. Rolland ..	3				
Dr. A. F. Stokes	11		6	3	
Dr. C. B. Sangster ..	10	1			
Dr. R. J. deN. Souter ..	11		5		
Dr. R. John Verco ..	12	2	6	3	2
Dr. J. S. Verco	8	2			1

Monthly General Meetings.

The absence of many of our members on full-time active service with the Forces and conditions created by the war have disturbed the normal routine and it has been necessary to curtail the activities of the Branch. There has been difficulty in maintaining a representative attendance at the monthly scientific meetings, and the scope of the Council in arranging programmes for the meetings has been limited. It was also felt that it was not encouraging when members went to a great deal of trouble in preparing papers to find so few members able to attend. The Council was loath to abandon the meetings altogether as they form an important part of the activities of the Branch, but after considering the matter very fully it was decided owing to existing circumstances to reduce the number, and also dispense with the annual Listerian Oration. As the war is making very heavy demands on those members who are carrying on practice at present, it was thought that the wisest course to adopt would be to arrange for clinical demonstrations and discussions which have proved popular in the past. Although arrangements were made for four clinical meetings to be held during the year, it was possible to hold two only as follows: September 5, 1941, at the Children's Hospital; November 27, 1941, at the Royal Adelaide Hospital. The Council is confident that with the end of the present war and the return to normal times, the monthly scientific meetings will resume their place of importance in the work of the Branch, and prove to be one of its most successful activities.

During the year the Australian Military Forces, Fourth Military District, arranged a series of lectures and demonstrations on Sunday mornings and afternoons, which were well attended by members of the Branch and proved highly interesting. We take this opportunity of thanking the military authorities for the invitation to civil medical practitioners to attend these lectures.

Membership.

The membership of the Branch is now 428, an increase of 18 on the previous year. The number of new members elected was 20, the balance representing deaths and transfers "in and out". It is with deep regret that we record the deaths of W. A. Verco, C. L. Strangman, A. C. Houen, C. H. G. Ramsbottom and G. H. Howard. Dr. Verco was a member of the Association for over fifty years. He was President in 1909, Honorary Treasurer for nineteen years, and a member of the Council for many years. The Council has placed on the records of the Branch its appreciation of his services.

Representation on Boards et cetera.

Medical Board of South Australia: H. H. E. Russell.

Dental Board of South Australia: Alan Britten Jones.

Nurses' Board of South Australia: L. A. Wilson.

Metropolitan Infectious Diseases Hospital Board: H. H. E. Russell, G. R. West.

Australian Aerial Medical Services Council: A. F. Stokes.

Executive Council Mothers and Babies' Health Association: D. G. McKay.

State Medical Coordination Committee: M. Erichsen.

Central Council of the Association: Isaac Jones.

Federal Council of the British Medical Association in Australia: Sir Henry Newland, A. F. Stokes.

Federal Council Contract Practice Committee: R. John Verco.

National Fitness Council: C. C. Jungfer.

The Council desires to express to these representatives its appreciation of their services on behalf of the Branch during the year.

Sections.

Owing to the absence of so many members on active service it has not been possible to hold regular meetings of the sections, some having gone into recess since the beginning of the war.

Lodge Practice.

There has been no change in the rates and conditions of lodge practice during the year. The Federal Common Form of Agreement, with a view to making lodge practice uniform in all the States, is still under consideration by the Federal Council.

Lodge Members on Active Service.

Conferences have taken place with the South Australian Friendly Societies' Association in reference to lodge members in the Australian Military Forces now called up for active service under regulation 77 of the *National Security Act*, and a request was made by the lodges that these members should be treated similarly to lodge members of the

Australian Imperial Force. The Council decided that lodge members previously in the Militia but now called up for full-time active service with the Australian Military Forces will receive the same concession as that given to members of the Australian Imperial Force, and which was agreed on at a meeting of the Branch held on March 19, 1940. Members have been advised of this in the monthly circular of April 10, 1942.

Adelaide Permanent Post-Graduate Committee.

Owing to the war, the committee decided not to hold the usual post-graduate course this year.

Registration of Foreign Medical Practitioners.

The Council has kept in close touch with the Medical Board of South Australia and the State Medical Coordination Committee with a view to using the services of foreign medical practitioners in hospitals, and in country districts where there is no resident medical practitioner. It has been the policy of the Council that, if possible, these practitioners should not be allowed to commence practice in metropolitan or country areas where members had left their practices to serve their King and country in this time of national crisis. Until recently, when once they had been registered in South Australia, no power existed to compel them to practise in certain places and they could practise in any suburb or country town. It was to prevent this that the Council previously approached the Government and a short amending bill to the present *Medical Act* was introduced into Parliament, providing for the licensing of these foreign medical practitioners to practise as directed and that they be not registered until after the war. The bill was not passed by Parliament. The Council is endeavouring to do everything possible in this direction to protect the interests of members who are away on active service. However, action has now been taken by the Federal Government which practically coincides with the action suggested by the Council and introduced in the South Australian Parliament.

National Health Insurance.

The general medical service for Australia formulated by the Federal Council was considered at a general meeting of the Branch held on December 11 last, when several amendments were suggested and these have been passed on to the Federal Council. Subsequently the members of the Branch were called together on March 26 last to consider a scheme suggested by the National Health and Medical Research Council for "A Whole-Time Salaried Medical Service". At this meeting a resolution was passed that the scheme was inadequate for discussion as consultation with the practising profession has not yet taken place. Whilst these and any other schemes brought forward will need to be considered by the Branch, an assurance in the meantime has been given by the Federal Minister of Health (Mr. Holloway) that nothing further will be done by the Government to introduce legislation on the matter until after the war.

War Emergency Organization: Protection of Incomes.

It was the intention of the Council to make a further appeal to members during the year for contributions to a suggested scheme for the purpose of giving some financial assistance to those members who had left their practices to serve with the Forces and who might need some help on their return. However, in view of the absence of many members, and the heavy financial calls being made in many directions, it has been thought wise to postpone for the present any further appeal for contributions.

Petrol Rationing.

The Council has given a great deal of attention to the question of the supply of petrol to members of the profession. At the suggestion of the Liquid Fuel Control Board, a subcommittee was appointed by the Council to confer with the State Board in regard to the supply of petrol to medical practitioners. This has proved helpful to members and the State Board has given every attention to the requests made for increased emergency supplies where the allowance has not been sufficient for professional purposes, and has granted additional allowance in practically every case submitted. However, in view of the serious position now obtaining in regard to petrol and the necessity of rendering the essential mileage of medical practitioners independent of imported fuel as far as possible, the State Board suggested that wherever practicable gas producers should be fitted to the motor cars of doctors. The Council fully considered the suggestion, but considered that gas producers were not suitable for use by doctors, particularly in the metropolitan area. A letter was sent to the State Board setting out many reasons why the fitting of gas producers should not apply to doctors' cars, and suggested that as medical attention to the civil population was a most important essential service, every other avenue in the reduction of petrol should be exploited first, and the supply to doctors reduced or cut off altogether only as a last resort. In view, however, of a recently published statement by the Minister of Supply, further reductions in the supply of petrol are likely, and the Council will watch developments, and if possible avoid further reduction in supplies to members, which it is felt under existing conditions would place a further heavy burden on those who are carrying on practice in the absence of many members on active service.

Honours to Members.

The Council tenders its congratulations to Dr. F. S. Hone, C.M.G., and Major-General S. R. Burston, C.B., on the honours conferred on them.

Appeal for Colleagues in Great Britain.

As a result of the appeal to members a sum of £630 7s. 6d. has been forwarded to the Federal Council from the South Australian Branch.

Roll of Honour.

The Council has considered the desirability of the Branch having a roll of honour, to record the names of those members who had served in the Boer War, the war of 1914-1918 and the present war. Most, if not all the other Branches, have erected these honour boards, but the matter was apparently overlooked in the last war by the South Australian Branch. As the annual dinner and golf tournaments have not been held for the past three years, it was thought that those who usually took part in these functions might be asked to contribute the amount charged them, in order to form the nucleus of a fund. Designs and prices for a board have been submitted to the Council, but in view of the heavy financial calls, necessary for the conduct of the war *et cetera*, it has been decided to postpone the matter for the present and appeal to members for contributions toward the cost of an honour board later on.

Health Week.

During the year radio broadcasts were given by members in connection with health week.

Amalgamation of Health Departments.

During 1935 the Council formulated a plan for the formation of a Ministry of Health, bringing the various health activities under one administrative head, and submitted the plan to the Government. Whilst it was realized that conditions had altered since that time, and that some of the recommendations made by the Council have been adopted, it was felt that the reorganization of the health departments on the lines previously suggested would increase efficiency in health control. The Council again approached the Government during the year, and asked that the necessary legislation be introduced to bring about the amalgamation of the hospitals and health departments under one administrative head. The Chief Secretary, however, took the stand that although the recommendations made are in the direction followed by the other States, he was not convinced that similar changes here would give results better than those already in force under the present system, and until he was convinced to the contrary he was not prepared to make the changes in the direction indicated by the British Medical Association. Although the Council is disappointed at the result of their action, in view of the reply of the Chief Secretary it was decided that the matter should be held in suspense.

Blackout of Motor Cars.

The Council has brought under the notice of Lieutenant-Colonel G. D. Shaw, Commissioner of Civil Defence, the difficulties experienced by country doctors in observing the regulations in regard to the blackout of motor car lights, and the suggestion made that country doctors be allowed to use full beam beyond one mile from a country town, or beyond ten miles from the coast. The Commissioner has taken the matter up with the Combined Defence Headquarters to see if any modification of the regulations will be agreed to.

Annual Dinner and Golf Tournament.

Owing to the war, it was decided not to hold these functions this year.

Finance.

There is a slight excess of income over expenditure for the year. The income has been considerably depleted by the allowance made in the subscriptions of those members on full-time duty with the Services, representing an amount of approximately £150. A dividend of £60 received from the British Medical Hall Company Limited was added to a reserve fund, and not taken into general revenue. Stationery, printing, postage, and other office necessities have increased considerably in price, thus adding to the expenditure. The credit balance under these circumstances is considered satisfactory.

The War.

June, 1942, sees still more of our members on service with the Navy, Army and Air Force. Of the 400 odd medical practitioners in the State, 158 are on whole-time duty with the defence forces, the number being made up as follows: Australian Imperial Force, 73; full time, 63; Royal Australian Air Force, 17; Navy, 5. In addition to these, 28 are on part-time service, 17 with the Army, 5 with the Navy, and 6 with the Royal Australian Air Force. Engaged in camp duties indefinitely are 8 with the Army and 1 with the Royal Australian Air Force. We feel that this constitutes a record of service and self-sacrifice of which the Branch has every right to be proud, and one which we look forward to seeing recorded for all time upon the honour board the Branch intends to erect at a later date. We welcome back to Australia those who, having been abroad on active service, have now returned in safety to Australia and enjoy the relief from anxiety felt by all for their safety during transit. This opportunity is taken to send our greetings and good wishes to those still overseas and our sympathetic remembrance to those who have become prisoners of war in alien lands, and we hope that the time is not far distant when all will return to Australia.

This report contains a brief summary of the work which has engaged the attention of the Council during the year. Many other matters affecting the interests of members have been dealt with, and considerable time has been devoted to a wide range of activities. Owing to the enlistment in the Australian Imperial Force of his assistant, extra work has been placed on the Lay Secretary, and our thanks are due to him for his loyalty and devotion to duty.

In conclusion, I desire to thank the members of the Council for their helpful and loyal support during the year as President.

(Signed) R. JOHN VERCO, President.

Financial Statement.

The financial statement was presented by Dr. P. T. S. Cherry, the Honorary Treasurer, who moved its adoption. The motion was seconded by Dr. F. St. J. Poole and carried. The income and expenditure account and the balance sheet are published herewith.

Election of Office-Bearers.

The President announced that the following office-bearers had been elected for the ensuing year:

President: Dr. R. J. Verco.
Vice-President: Dr. E. A. H. Russell.
Honorary Treasurer: Dr. P. T. S. Cherry.
Honorary Medical Secretary: Dr. John L. Hayward.
Members of Council: Dr. C. F. Drew, Dr. E. F. Gartrell, Dr. J. C. Mayo, Dr. J. S. Covernton.

President's Address.

Dr. R. J. Verco, in the course of his President's Address, said that much water had run under the bridge since he was elected President two years previously. At the onset of his third year of office he did not intend to give an address dealing with very weighty matters, but would confine his remarks to topical and perhaps some irrelevant matters. He congratulated Dr. F. S. Hone, Dr. T. G. Wilson and Major-General S. R. Burston on the honours recently conferred on them. He also raised the question of the establishment by the Federal Parliament of some "indigenous mark of its own" to acknowledge the valuable services of Australians to Australia. In further reference to honours Dr. Verco expressed the hope that an honour board for the names of members who enlisted in the South African War, the war of 1914-1918 and the present war would be provided during the next twelve months. This also raised the question of a permanent home for the Branch. No steps in this direction could be taken during the war, but he hoped that it would be possible to do something concrete at the earliest possible moment. He could think of nothing which would add to the strength, happiness and unity of the Branch so much as a suitable building of its own. He also drew attention to the increasing and constant fatigue among civil medical practitioners, and doubtless amongst those combining civilian work with part-time service for the armed forces. Numbers of these men were working seven days a week and 365 days a year. How long they could go on thus without rest or recreation was a matter of pure conjecture, but no doubt some would begin to fall by the wayside as pressure increased and lengthened. The Service departments, like some insatiable Moloch, appeared to gobble up all available medical manpower as it matured at the University and the general hospitals. The constantly increasing volume of enlistments in the fighting services and Militia was a perfectly reasonable and valid excuse. The Army needs had to be satisfied first, and Dr. Verco supposed that there was no escape from keeping medical units up to their planned establishment strength, even though the personnel might be extravagant, except in the event of actual combat in all directions at once. In spite of these considerations, however, undoubtedly the time would come when the burden of civilian practice would have to be lightened so as to preserve even existing personnel. The presence of large numbers of country dwellers in the metropolitan area also aggravated the condition of civil practice in Adelaide.

Dr. Verco acknowledged on behalf of the Branch the appreciation of members towards Colonel A. R. Southwood and the Australian Army Medical Corps for having made available to members a series of very valuable and interesting lectures. The subjects dealt with had been treated in a very comprehensive way and provided a model which the medico-scientific subcommittee of the Branch might do well to keep in mind when arranging monthly meetings. At the last lecture which Dr. Verco attended, one speaker had remarked that the students who attended were fortunate to be present. Dr. Verco felt that the average general practitioner was considerably more fortunate, and probably stood in greater need of such post-graduate information than the student. The most crying need of the medical profession in his opinion was post-graduate tuition in which subjects were treated in a comprehensive and detailed manner. General practitioners at all events badly needed the opportunity to go to school again in such basal subjects as anatomy, pathology, diagnosis, therapeutics *et cetera*.

Income and Expenditure Account for Year ended December 31, 1941.

	£	s.	d.	£	s.	d.
To British Medical Association, London	525	0	0			
„ THE MEDICAL JOURNAL OF AUSTRALIA	362	0	0			
				887	0	0
„ Library Subscriptions				76	15	0
„ Federal Council Capitation Fees				123	0	0
„ Postages and Telegrams				46	14	0
„ Stationery and Printing				88	6	10
„ Telephone				31	7	6
„ Rent				43	14	11
„ General Expenses				69	19	9
„ Salaries				571	0	0
„ Depreciation				5	11	10
„ Lister Medal and Expenses				2	17	10
„ Balance transferred to General Fund				18	4	6
				£1,964	12	2

	£	s.	d.	£	s.	d.
By Subscriptions—						
City	1,318	14	6			
Country	497	15	0			
Accrued	126	12	0			
				1,943	1	6
„ Interest				21	2	7
„ Medical Certificate Books					8	1
				£1,964	12	2

Balance Sheet as at December 31, 1941.

LIABILITIES.	£ s. d.	£ s. d.
To British Medical Association, London—		
Paid Subscriptions	35 1 3	
Unpaid Subscriptions	38 5 0	
		73 6 3
„ THE MEDICAL JOURNAL OF AUSTRALIA—		
Paid Subscriptions	20 0 0	
Unpaid Subscriptions	25 0 0	
		45 0 0
„ Library Fund		254 9 2
„ Sundry Creditors		237 19 11
„ National Health Insurance Contribution Fund		331 3 0
„ British Medical Hall Dividend Account		115 0 0
„ National Bank of Australasia, Ltd.		41 0 0
„ General Fund		3,054 11 10
		£4,152 10 2

ASSETS.	£ s. d.	£ s. d.
By Plant and Fittings	62 9 6	
Less Depreciation	3 5 0	
		59 4 6
„ British Medical Hall Company Limited Share Account	2,540 0 0	
„ British Medical Hall Company Limited Current Account	213 17 4	
		2,753 17 4
„ Library Account—		
Delineascope	18 0 0	
Projector	26 0 0	
	44 0 0	
Less Depreciation	7 0 0	
		37 0 0
„ Savings Bank Library Account		251 13 2
„ Lister Dies and Medals	20 6 10	
Less Depreciation	2 6 10	
		18 0 0
„ Subscriptions Owing		252 10 7
„ Stocks—		
Hospital Forms	15 7	
Medical Certificate Books	12 4	
Stationery	30 0 0	
		31 7 11
„ Sundry Debtors		60 17 3
„ National Health Insurance Contribution Fund—		
Savings Bank of South Australia	31 3 0	
Commonwealth War Loan	300 0 0	
		331 3 0
„ Cash—		
Commonwealth Savings Bank	202 11 11	
Savings Bank of South Australia	149 19 2	
In Hand	4 5 4	
		356 16 5
		£4,152 10 2

WALTER C. DOBBIE, Secretary. P. T. S. CHERRY, Honorary Treasurer.

We hereby report:

(1) That we have examined the Books and Accounts of the South Australian Branch of the British Medical Association, Incorporated, for the year ended December 31, 1941.
(2) That we have received all the information and explanations we have required.
(3) That in our opinion the above balance sheet is properly drawn up so as to exhibit a true and correct view of the affairs of the Branch as at December 31, 1941, according to the best of our information, the explanations given us, and as shown by the books produced.

Adelaide,
May 21, 1942.

MUECKE, PICKERING & MITTON,
Chartered Accountants (Australia), Auditors.

Dr. Verco said that before he died he hoped to see systematic courses of lectures open to graduates on Sunday evenings in the winter months, and even more than that, he hoped to see them fully attended by an adequate number of enthusiastic seekers after truth. Some method of equalizing the information and knowledge of all members of the profession should receive support and stir enthusiasm.

Dr. Verco hoped that members would not allow fatigue and overwork to blunt them to the necessity of keeping a wide-awake eye upon the ever-changing horizons of the profession's medico-political future. Two alternative schemes were definitely before members, and warranted the very closest attention. The Federal Council had a scheme for a general medical service, and the National Health and Medical Research Council had produced a scheme for a whole-time salaried service upon which the present Federal Government looked with a benevolent eye. Both of these schemes gave ample opportunity for considerations of a very practical nature upon how they could be applied in a fair and practicable manner in regard to the medical profession, as well as to the ultimate satisfaction and utility for the general public.

The time perhaps was not so very far off when these problems would descend upon the profession like an avalanche, and woe betide its members if they were not ready for the avalanche. It was to be hoped that the hour would produce the man for them. They would then need a President of outstanding ability, a man of courage, determination and clear foresight. Surely there must be such a one amongst all the members. They would, he hoped, have a brave new President to lead them in a brave new world.

Correspondence.

HYPERTENSION.

SIR: Dr. Kinsella's letter upon hypertension (July 18, 1942) is deserving of a considered reply. Few would have disagreed with him when he assured his resident medical officer that hypertension is anything but boring. The general attitude of boredom to those diseases whose cause is unknown (the great majority) is a vast impediment in the path of medical progress. But it remains doubtful if he is assisting the progress of medicine when he trains the young man to incriminate the tonsils of the hypertensive by squeezing pus out of them. If at the beginning of our search for knowledge we are asked to accept as a basic fact such an unproven theory as that of focal sepsis, we shall not travel far on the path, for we will be side-tracked into a cul-de-sac in which we will merely do more and more tonsillectomies.

As the theory that chronic pharyngeal sepsis causes high blood pressure is purely an unproven hypothesis, the onus of proving it rests on Dr. Kinsella before he asks us to accept it. When he demands its disproval he is disobeying the rules of logic; no matter how great his own faith, the theory still is unproven. As a matter of fact, though the hypothesis is so popular as to be almost universal, the evidence in its favour amounts to surprisingly little. Dr. Kinsella advances only six sufferers from hypertension whose health improved after the removal of infective foci. As coincident lowering of their blood pressures is not recorded, the observations prove very little. The two analogies which he adduces are not admissible, for neither relates to chronic focal sepsis of the type under discussion. That rheumatism follows acute infections, and that the kidney itself is subject to acute bacterial infections, are known scientific facts; this cannot be said of the theory that chronic pharyngeal infection can cause the blood pressure to rise.

As a matter of fact, no improvement results in the vast majority of those who are subjected to tonsillectomy, and the operation is not harmless. Reimann and Havens (*The Journal of the American Medical Association*, 1940, Volume CXIV, page 1), who recently reviewed the subject, state that the operation is responsible for 85 deaths per year in Britain, and very many more in America. They hold that no definite standards of infection are laid down; that according to varying authorities infected tonsils may be large, scarred, small, adherent, or with crypts filled with purulent matter. They quote many advanced authorities who deny the theory, including R. L. Cecil, who ten years ago was one of its most ardent advocates. The writers assert that there is no more justification for removing tonsils in rheumatism than in tuberculosis, and they ask why these diseases do not occur in association with proven chronic sepsis such as bronchiectasis.

In assessing the value of treatment in chronic diseases of unknown causation, it is important to be on guard against over-optimism, and the clinician should be ready to discount the fleeting subjective impressions of his patient. The symptoms of all chronic diseases wax and wane, and the majority of people cannot be trusted when they claim early benefit from a new treatment or a new doctor.

Yours, etc.,

M. KELLY.

Peppermint Grove,
Western Australia,
August 8, 1942.

THE WAR, QUININE AND THE MEDICAL PROFESSION IN AUSTRALIA.

SIR: The timely reminder in your recent leading article (THE MEDICAL JOURNAL OF AUSTRALIA, August 1, 1942) concerning the urgent necessity for conserving available supplies of quinine for anti-malarial therapy directs attention to the therapeutic possibilities of stilbœstrol as a suitable alternative in obstetrical practice, especially in connexion with the medical induction of labour.

Whilst it is apparent that stilbœstrol alone does not initiate labour, there is ample evidence that, at least in the latter weeks of pregnancy, the œstrogen, when used in sufficient dosage, will sensitize the uterus to the subsequent action of oxytocic preparations; and thus should meet all the requirements previously sought by the preliminary administration of quinine.

Moreover, since this "priming" action of the œstrogen on the gravid uterus is probably a natural occurrence in the spontaneous initiation of labour, this form of therapy is more rational than the artificial sensitization of the uterus by quinine.

Assuming that the results of stilbœstrol therapy are satisfactory—and clinical trials in this connexion have satisfied me that they are—the only objection to its routine use for the medical induction of labour is the possible occurrence of nausea and vomiting as side effects of its administration.

In this connexion a recent report by A. R. Abarbanel (*Surgery, Gynecology and Obstetrics*, August, 1941) is illuminating. After previous investigation had shown that the puerperal patient could easily ingest as much as 250 milligrammes of stilbœstrol per day without any true toxic effects, he evolved a routine for its use in the induction of labour, giving ten milligrammes of stilbœstrol hourly for ten doses, followed, after an interval of some hours, by the administration of the appropriate oxytocic preparation with entirely satisfactory results.

The chief point of interest about this report, however, is the high effective dosage which his patients were apparently able to tolerate; which should be an indication not to abandon this form of medical induction because of indifferent results with smaller dosage.

In any case, except for the possibility of vomiting the ingested stilbœstrol—which is obviously a serious disadvantage—the temporary nausea is surely no more distressing to the patient than the persistent tinnitus so common with quinine therapy.

Yours, etc.,

G. SHEDDEN ADAM.

Department of Obstetrics,
The University of Queensland,
Brisbane.
August 8, 1942.

SIR: I read your editorial on the use and misuse of quinine with interest and sympathy; but I could not help feeling that faulty reasoning was at work somewhere. One must assume at once that all raw quinine which can be used for anti-malarial purposes has already been seized for that purpose; and that, therefore, when the present stocks of the various quinine preparations are expended, no more will be forthcoming for any but anti-malarial use.

What about those stocks? The quinine and urethane ampoules, the quinine pessaries, the millions of "Q.E.S." tablets, the lesser containers such as Easton's syrup, and the stocks of quinine tinctures with which wholesale and retail chemists make up their various mixtures. If it is possible for the quinine in these to be extracted and made available for more urgent use, I presume such stocks would be called in, in view of the obvious need.

If it is not possible to do this, and the stocks are left as they are, it is hard to see that it is unpatriotic to make use of such as are available rather than to leave them lying on the shelves of the chemists until the end of the war, and beyond.

Yours, etc.,

ARTHUR E. BROWN.

Colac,
Victoria,
August 15, 1942.

[We understand from Sir Alan Newton, Chairman of the Medical Equipment Control Committee, that it is not practicable to recover quinine from various mixtures mentioned by Dr. Brown. Instructions have been issued to manufacturing firms that quinine is not to be used in the manufacture of Easton's syrup and "Q.E.S." tablets. They have also been instructed to refrain from making up ammoniated tinctures of quinine and similar preparations. In other words, the supply has been cut off at the source because most of these preparations are manufactured by wholesalers rather than retailers. There is no objection to the use of stocks already prepared before these instructions were issued, in view of the fact, already stated, that recovery of quinine is not practicable. In order to make sure that wholesalers would comply with the Committee's request and in order to provide the army with all the quinine available in Australia, the vast majority of stocks were purchased by the Contracts Board for the army. It was considered necessary to leave a certain small quantity of quinine in the hands of pharmacists for use in malaria and for that purpose alone; it was to secure the cooperation of the medical profession in this matter that the leading article of August 1, 1942, was published.—EDITOR.]

ABBREVIATIONS AND FRACTIONS OF A YEAR.

SIR: It has been the custom at least for a generation or perhaps for several generations for medical men, graduates as well as undergraduates, of all degrees of abilities, teachers and students alike, to express times as fractions of a year; thus 6 months becomes $\frac{6}{12}$ or 6/12, 10 weeks $\frac{10}{52}$ or 10/52, and even 5 days $\frac{5}{365}$ or 5/365. Even in an article in the *British Medical Journal* (table on page 487, issue of April 18, 1942, third column) this habit has been adopted. One notices that outside the medical profession such a system is rarely

if ever adopted. But what is the merit of this practice? Is it seriously claimed that $\frac{6}{12}$ is a saving of time and mental effort as compared with 6 months or its abbreviation 6 mos.? Certainly nobody could honestly claim that $\frac{5}{365}$ is shorter to write or a less mental effort than 5 days or an abbreviation such as 5 dys. or 5 ds.

It may be that those who practise this habit harbour a secret desire to be different to those outside the profession, if it is not a survival of a practice when it was fashionable to adopt a "hieroglyphical" style of medical literature. However, it is surely time to discourage this very slovenly and ugly habit, and perhaps a new generation of students may learn that it has no real advantage, and surely does not add dignity or prestige to the writers of such formulæ. It is only the recent generation, however, that has adopted the abbreviation t.b., originally applied to the organisms tubercle bacilli, as synonymous with tuberculous (infection) or tuberculosis, a practice now spread to the laity. This is another common instance of an acquired carelessness, which should be condemned.

It is hoped that medical literature, even if unpublished, may be considerably improved in quality by the abolition of these customs.

Yours, etc.,

H. FLECKER.

Cairns,
Queensland,
August 7, 1942.

AN EPIDEMIC OF CONJUNCTIVITIS.

SIR: There have been in Melbourne some minor epidemics during the severe winter. Colds on a scale not usually experienced, a number of gastric and intestinal attacks probably due to food poisoning and quite a number of cases of conjunctivitis which may or may not be associated with the other infections. One of them was quite unknown to me, severe injection of the conjunctiva which in the inner part of the eye caused a large heaping up of the infected material and a superficial abscess. I obtained from the bacteriological department two thorough examinations. Nothing was found except diphtheroid organisms, and from the throat which was sore, streptococcus not hæmolytic. Dr. Anderson informs me at the Eye and Ear Hospital that sulphonamide, carefully strained in cod liver oil, has been used in corneal ulceration with success. It is prepared in a 5% solution of cod liver oil.

As the oil interferes with vision, I have been using "Prontosil Soluble" 2·5% in cases without ulceration. This seems to be rapidly absorbed into the conjunctiva. It does not irritate. What organism it is which causes this extensive trouble has not been discovered so far. At all events "Prontosil" seems to reduce the duration of the long-continued inflammation which is troublesome to a degree and at times with rapidity. Consequently, as is so often the case in medicine, the treatment is empirical. It seems to be one of the blind shots which has hit the target. At all events the patients think so.

But there is, however, some experimental evidence which may be relevant (see *Nature*, Volume XXII, 1942, Number 2). Robson and Scott published an illustrated account of severe corneal lesions in rabbits' eyes produced by *Staphylococcus aureus*, and controlled to a marked extent by some sulphonamide. It seems that penicillin and sodium sulphacetamide may be of value in human beings as local applications. The sodium sulphacetamide solution suggested is 10%. But one can only observe caution, realizing the different nature of man and animals, especially in eye conditions.

Yours, etc.,

JAMES W. BARRETT.

103-105, Collins Street,
Melbourne,
August 11, 1942.

WAR NEUROSIS.

SIR: As one who has been engaged in treating "war neurosis" for the last twenty years, I was much interested in the paper by Lieutenant-Colonel Cooper (deceased) and Captain A. J. M. Sinclair.

The chief point of interest is the statement that 61% of the patients with war neurosis admitted to hospital in Tobruk are now serving as fighting soldiers, and another 23% are serving on base duties. Frankly, I must state that I find it very difficult to believe these statistics. Neurotic states, whether occurring in war or civil life, are not "cured" as easily as that; nor are the patients suffering from a real war neurosis, capable of returning to front-line duty, in 61% of instances. Such results would smack of the miraculous.

I think there may be two explanations of the figures given:

1. These men were not suffering from a real neurosis, they were just fed up or suffering from fear of a real situation, not a fear of something unknown, something in themselves that is truly characteristic of neurotic fear.

2. Some of them were most likely "pulling the legs" of the gallant medical officers. Such things do take place, as I know from personal experiences. It is, of course, difficult to acknowledge such, but the soldier knows, and does a lot that we medical men don't always realize.

I make these remarks not so much in a critical spirit as to warn the profession against too optimistic an attitude towards the treatment and prognosis of war neurosis.

Yours, etc.,

PAUL G. DANE.

110, Collins Street,
Melbourne,
August 15, 1942.

POST-OPERATIVE TREATMENT OF MASTOID OPERATIONS.

SIR: May I reply to Dr. Jay (THE MEDICAL JOURNAL OF AUSTRALIA, August 8, 1942) that what he refers to as controversial statements of high calibre became established facts so long ago as 1909 when Gustav Bondy published the account of his epitympano-mastoid operation together with the histories of four patients. All these had cholesteatoma and one an extradural abscess and fistula in the lateral semicircular canal as well. Yet, all healed easily and with improved hearing. Indeed, my own experience has shown me beyond any doubt that cholesteatoma, and even labyrinthine fistula, is no bar to this conservative radical operation.

It is evident from Dr. Jay's letter that the conservative operations which he performed "to his sorrow" were not the same operations to which I referred, namely, the epitympano-mastoid operation. Heath's operation is not a modification of the "radical" operation but of the "simple" operation. It leaves the bridge intact, so preventing the achievement of its two objects, namely, simplification of the cavity and access to the disease. Thus for chronic cases it is quite unsuitable and in acute otitis it involves an unnecessary injury to the auditory canal without advantage.

The classical radical operation calls for curettage of the middle ear cavity proper. There is no reason for this and its performance often causes serous or purulent labyrinthitis. Mesotympanic or tubal infections do not require operation and are not cured by it and there is no reason why, when epitympanic infection exists in the same case, the latter cannot be treated by Bondy's operation while the former receives treatment by the usual conservative method.

It is admitted that there are exceptions. In recent months I have seen three patients with malignant disease of the ear who required full radical operation. But, as the operation of choice in chronic suppuration, whether cholesteatoma is present or not, I prefer the "conservative radical mastoid operation" every time.

Yours, etc.,

ERIC P. BLASHKI.

193, Macquarie Street,
Sydney,
August 14, 1942.

Post-Graduate Work.

LECTURES IN SYDNEY.

A COURSE of winter lectures arranged by the New South Wales Post-Graduate Committee in Medicine is being held at 4.30 p.m. each Monday afternoon at the Stawell Hall, Royal Australasian College of Physicians, 145, Macquarie Street, Sydney. There will be no charge for attendance at these lectures which are as follows:

Monday, August 31, 1942, 4.30 to 6 p.m.—Programme arranged by members of the 47th Station Hospital Unit, United States Army:

1. Major Robert L. Robinson: "Varicose Veins." Discussion.
2. 1st Lieutenant Harold E. Goldberg: "The Cardiac Silhouette in Rheumatic Heart Disease." Discussion.
3. Captain J. E. Ruben: "Pre- and Post-Operative Care from the Anæsthetist's Viewpoint." Discussion.

Monday, September 7, 1942, 4.30 to 6 p.m.—Programme arranged by medical officers of the Royal Australian Air Force:

1. Flight Lieutenant Adrian McGlynn: "Experiences of a Squadron Medical Officer at an Advanced Operational Base."
2. Flight Lieutenant A. K. McIntyre: "Air-Sickness."
3. Professor F. S. Cotton: "General Aspects of 'Blackout' in Aviation."

Monday, September 14, 1942, 4.30 to 6 p.m.—Colonel W. Hailes has been invited to deliver a lecture on this date.

Monday, September 21, 1942, 4.30 to 6 p.m.—"Dengue." Speakers to be arranged.

Monday, September 28, 1942, 4.30 to 6 p.m.—Demonstration of clinical cases to be arranged by Surgeon Lieutenant-Commander K. Maddox and Squadron Leader A. J. Hood Stobo.

Monday, October 5, 1942, 4.30 to 6 p.m.—A programme will be arranged by the staff of the 120th Special Hospital.

Ward Rounds for Members of the Defence and Allied Forces.—Arrangements have been made for a number of medical officers of the defence and allied forces to attend hospital ward rounds at the Royal Prince Alfred Hospital, Camperdown, on Tuesday and Thursday afternoons by Surgeon Lieutenant-Commander K. Maddox. The number for attendance is limited and those who wish to attend should communicate with the Secretary of the Post-Graduate Committee, 145, Macquarie Street, Sydney. Telephone B 4606.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following communication, dated April 9, 1942, was received by the Secretary of the Medical Board of New South Wales.

IN THE MATTER of the *Medical Practitioners Act* 1938 as amended

AND IN THE MATTER of a Complaint to the Board of Health under Section 27 of the said Act against John Cappie Shand a registered person.

THE BOARD OF HEALTH having received the Complaint dated the sixth day of April 1942 by Charles Victor Francis (which is hereunto annexed) that JOHN CAPPIE SHAND a person registered under the *Medical Practitioners Act* 1938 as amended has been guilty of infamous conduct in a professional respect and the said Board having caused such Complaint to be investigated and being of opinion that the circumstances warrant this course hereby refers such Complaint to the Disciplinary Tribunal constituted under Section 28 of the said Act.

Dated this ninth day of April 1942.

(Sgd.) J. B. BOYLE,
Secretary,
Board of Health.

The Secretary,
Medical Board.

MEDICAL PRACTITIONERS ACT, 1938 (AS AMENDED).

Complaint against a Registered Person under Section 27 of the Act.

I, CHARLES VICTOR FRANCIS, Chief Food Inspector, Department of Public Health, 52 Bridge Street, Sydney, in the State of New South Wales, hereby complain that JOHN CAPPIE SHAND, of 201 Macquarie Street, Sydney, in the said State, a person registered under the *Medical Practitioners Act*, 1938 (as amended) has been guilty of infamous conduct in a professional respect in that—

(1) the said John Cappie Shand acting in a professional capacity in connection with certain claims for compensation for injuries and/or sickness from time to time made on the Mutual Life and Citizens' Assurance Company Limited by John Laurence Fallon, a person for a number of years well known to him the said John Cappie Shand, did give to him the said John Laurance Fallon well knowing the purpose for which they were required by the said John Laurence Fallon the Medical Certificates referred to in the Schedule hereto in the names of "Robert George Turner" "R. G. Turner" and "Andrew Bolger" well knowing that the said names "Robert George Turner" "R. G. Turner" and "Andrew Bolger" so written in the said Medical Certificates were untrue and false and that the alleged persons so named in such Medical Certificates were in fact identical with the said John Laurence Fallon and by virtue of which Medical Certificates so given by the said John Cappie Shand as aforesaid the said John Laurence Fallon did make claims on and unlawfully obtain divers sums of money from the said Mutual Life and Citizens' Assurance Company Limited:

(2) the said John Cappie Shand did make statements in Medical Certificates for insurance purposes knowing the same to be false, that is to say—

(a) the statement "No—not previously" in the Certificate dated the 10th October 1941 of Medical Attendant (endorsed on the Accident Claim by the said John Laurence Fallon under the name of "Robert George Turner" on the Mutual Life and Citizens' Assurance Company Limited) in answer to the question in Clause 1 (d) "Are you the usual medical attendant of the claimant, if so, how long have you known him?"

(b) the statement "No" in the Certificate of Medical Attendant dated the 5th January 1942 (endorsed on the Sickness Claim by the said John Laurence Fallon in the name of "Robert George Turner" on the Mutual Life and Citizens' Assurance Company Limited) in answer to the question in Clause 7 on the said Certificate "Has the claimant been attended by you or any other medical man for a previous attack of this or any other illness? If so, give particulars."

The Schedule Above Referred to.

(1) 1941 October 10th: Certificate of Medical Attendant of this date endorsed on Accident Claim Application to the Mutual Life and Citizens' Assurance Company Limited by one therein named as "Robert George Turner".

(2) 1941 December 10th: Certificate of Medical Attendant of this date endorsed on Accident Claim Application to the Mutual Life and Citizens' Assurance Company Limited by one therein named as "R. G. Turner".

(3) 1942 January 5th: Certificate of Medical Attendant of this date endorsed on Sickness Claim Application to the Mutual Life and Citizens' Assurance Company Limited by one therein named as "Robert George Turner".

(4) 1940 May 11th: Medical Certificate of this date endorsed on Accident Claim Application to the Mutual Life and Citizens' Assurance Company Limited by one therein named as "Andrew Bolger".

(5) 1940 August 12th: Certificate of Medical Attendant of this date endorsed on Sickness Claim Application to the Mutual Life and Citizens' Assurance Company Limited by one therein named as "Andrew Bolger".

(6) 1940 December 6th: Certificate of Medical Attendant of this date endorsed on Accident Claim Application to the Mutual Life and Citizens' Assurance Company Limited by one therein named as "Andrew Bolger".

I request that this complaint be investigated by the Board of Health and if circumstances so warrant the complaint be referred to the Disciplinary Tribunal constituted under the said *Medical Practitioners Act*, 1938 (as amended) for inquiry.

Signed at Sydney this sixth day of April 1942.

(Sgd.) C. V. FRANCIS.
(Signature of Complainant.)

(Sgd.) A. H. KIRCHEN, J.P.
(Signature of Witness.)

The Secretary,
Board of Health.

An inquiry was instituted on August 6, 1942, by the Disciplinary Tribunal constituted under the *Medical Practitioners Act* and consisting of the following: His Honour Judge McGhie (Chairman), Sir Robert Wade, Dr. H. R. G. Poate, Dr. H. Ritchie, Dr. H. R. Grieve.

The finding of the tribunal was announced by His Honour Judge McGhie as follows:

"The Tribunal is of the opinion that the matters charged should not be dealt with separately but should be considered as a whole.

"We find that Dr. John Cappie Shand is guilty of infamous conduct in a professional respect. As the evidence submitted discloses that no improper benefit was obtained, we, exercising our powers under Subsection 2 of Section 29 of the Medical Practitioners Act, 1938/39, issue to the said Dr. John Cappie Shand a severe reprimand, and wish to put on record that in our considered opinion the methods disclosed in dealing with medical certificates are highly reprehensible.

"The decision as to the Tribunal's finding is unanimous, but as to the punishment meted out a minority is of the opinion that it should be more severe."

Medical Practice.

THE SUPPLY OF HOT WATER BOTTLES.

THE following letter addressed to Dr. C. H. Dickson, Medical Secretary of the Victorian Branch of the British Medical Association, by the Pharmaceutical Society of Victoria has been forwarded by Dr. Dickson for publication.

Dear Dr. Dickson:

A number of members of this Society have reported to the Council that they frequently receive doctors' prescriptions for hot water bottles. Apparently there is a general belief that stocks of hot water bottles are available, and may be obtained only on the written order of a medical practitioner.

Actually, retail pharmacists have no supplies at all, nor are further stocks of hot water bottles being manufactured.

The Council has requested me to communicate with you in regard to the matter, and would appreciate your comments as to whether the position could be brought under the notice of doctors in Victoria through your Association.

Yours faithfully,

(Signed) F. C. KENT, Secretary,
Pharmaceutical Society of Victoria.

360, Swanston Street,
Melbourne.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 219, of August 13, 1942.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Promotion.—Surgeon Lieutenant (D) Oswald Trethewey Amos is promoted to the rank of Surgeon Lieutenant-Commander (D), dated 25th July, 1942.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Promotion.—Surgeon Lieutenant John Matthias Joseph Jens is promoted to the rank of Surgeon Lieutenant-Commander, dated 15th June, 1942.

Royal Australian Naval Volunteer Reserve.

Confirmation in Rank.—Surgeon Lieutenant (on probation) Clifford Gerhardt Semler is confirmed in the rank of Surgeon Lieutenant, with seniority in rank of 19th June, 1941.

ROYAL AUSTRALIAN AIR FORCE.

Citizen Air Force: Medical Branch.

The probationary appointments of the following Squadron Leaders are confirmed: K. A. McLean (1698), K. G. Colquhoun (3232).

The probationary appointments of the following Flight Lieutenants are confirmed: J. Catarinich (1887), C. H. Anderson (1975), J. K. Gabriel (2085), C. V. W. Brown (1467), J. L. Williams (1894), B. C. Pirie (2084), J. Deane-Butcher (2117), W. G. Gailey (2375), L. L. Edwards (2615), G. Mackintosh (2616), J. S. Bothroyd (1461), J. T. Gunther (2756), T. W. Jenkins (2867), L. F. Hayley (2896), A. A. Murray (2893), M. H. M. Ryan (2894), J. L. Cole (3128), T. N. Osborne (3182), K. J. Robertson (3183), A. J. M. Dobson (2289), T. W. Vorrath (2750), R. C. Willis (3219), V. J. Oldum (3222), R. W. Custance (3224), J. S. Boxall (3226), A. E. Dickmann (2396), S. D. Watsford (3263), J. R. McCoy (3345), M. Rohan (3344), N. G. J. Simpson (2838), F. L. Hardwick (3433), W. J. Purton (3434), J. W. L. Price (2118), N. Oldfield (2296), W. A. R. Smith (2354), T. W. Capell (3179), N. D. Barr (3440), D. J. Dowling (3441), J. N. Sevier (3442), W. H. Smith (3443), W. C. T. Upton (3455), T. T. Pearson (3469), R. S. Traill (3470), D. K. Wall (3471), N. G. Bickford (3444), R. D. Hanslow (3445), P. R. Howard (3446), N. H. Roydhouse (3447), F. X. Vincent (3449), L. P. Vincent (3450), W. A. McKay (3472).—(Ex. Min. No. 102—Approved 4th August, 1942.)

The probationary appointment of Temporary Flight Lieutenant I. I. Brodsky (3895) is terminated with effect from 3rd July, 1942.

The following are transferred from the Reserve to the Active List with the rank of Flight Lieutenant, with effect from 6th July, 1942: Kenneth Francis Brennan, M.B., B.S. (3473), John Beaumont-Haynes, M.P.S., F.B.O.A., M.B., B.S. (5168), Arthur Paul Cahill, M.B., B.S. (4367), Cyril Harcourt Chambers, M.B., B.S. (4904), Maurice Vivian Clarke, M.B., B.S. (3717), Henry Roy Clegg, M.B., B.S. (3408), William Redmond Dalton, M.B. (5172), Justin Paul Fleming, M.B., B.S. (3942), Colin Patrick Harrison, M.B., B.S. (5173), Francis Winston Kiel, M.B., B.S. (3233), Maurice Malcolm McKeown, M.B., B.S. (5912), Kenneth William MacLeod, M.B. (3453), Leslie John Ray, M.B., B.S. (3941), Graeme Foster Salter, M.B., B.S. (3256), James Hamilton Smith, M.B., B.S. (3338).

Reserve: Medical Branch.

Temporary Flight Lieutenant H. R. P. Boucaut (2873) is transferred to the Reserve with effect from 20th June, 1942.—(Ex. Min. No. 104—Approved 4th August, 1942.)

The following are appointed to commissions on probation with the rank of Flight Lieutenant, with effect from the dates indicated: Challen Sydney Kerr, M.B., B.S. (5947), Carl Ross Ewen Stephens, M.B., B.S. (6320), 26th June, 1942; Ernest William Lee, M.B., B.S. (6050), William Mervyn Barrett, M.B., B.S. (6051), 30th June, 1942.—(Ex. Min. No. 106—Approved 4th August, 1942.)

CASUALTIES.

ACCORDING to the casualty list received on August 17, 1942, Captain A. F. Smith, A.A.M.C., Neutral Bay, New South Wales, Captain L. O. S. Poidevin, A.A.M.C., Scone, New South Wales, Captain R. G. V. Parker, A.A.M.C., Rose Bay, New South Wales, Major D. A. Procter, A.A.M.C., Mosman, New South Wales, and Captain R. G. Wright, A.A.M.C., Lismore, New South Wales, are reported to be missing abroad.

According to the casualty list received on August 20, 1942, Lieutenant-Colonel N. M. Eadie, A.A.M.C., Lower Plenty, Victoria, is reported to be missing, believed prisoner of war.

According to the casualty list received on August 24, 1942, Captain A. K. Barrett, A.A.M.C., Rose Bay, New South Wales, and Major E. L. Corlette, A.A.M.C., Orange, New South Wales, are reported to be missing abroad.

Obituary.

ARTHUR AUBREY PALMER.

DR. R. M. MACKAY has sent the following appreciation of the late Dr. Arthur Aubrey Palmer.

It was hoped that an abler pen than mine would have paid some tribute to the memory of the late Dr. Arthur A. Palmer, so many years Government Medical Officer for Sydney.

For some years it was my privilege to work with Dr. Palmer on governmental work, during which I came to know him intimately, and to admire the soundness of his forensic knowledge and value his loyalty as a colleague.

In the Sydney Morgue, and as Police Surgeon, Palmer over the years had a vast experience in forensic medicine and medical jurisprudence. He was at all times most willing to share this knowledge with any member of the profession seeking his advice or help. Only those working with him realised what a lot the medical profession owed to him. Under what at first seemed a somewhat harsh exterior, Arthur Palmer was one of the most kind-hearted and sympathetic men I have known. He did not suffer fools gladly, but I never knew him to speak sharply under stress of some annoyance without immediately regretting it—and blaming himself. In my experience he never let a medical colleague down. If at times he differed in opinion on any matter from what might be termed the "accepted view", one learnt that he only did so by reason of a much vaster experience of the subject than the majority of medical men could possibly have. Most leading forensic medicine experts become dogmatic, but Palmer was never that without good reason.

In the courts Palmer was the "model medical witness": his facts and answers were precise; his evidence always right to the point, shorn of unnecessary trimmings, uninfluenced by the fact that it might help or hinder either side; and any opinion expressed was always based on his own experience. These characteristics were much appreciated in the workers' compensation jurisdiction.

When the occasion allowed, Palmer could discourse in the most absorbing way on crimes and occurrences in the social and underworld of Sydney—far more interesting than any detective fiction. Unfortunately these reminiscences were never committed to paper, although he was often urged to do so, and with his passing away a wealth of medical forensic lore has been lost. He suffered from a want of coordination between his mind and his pen which made calligraphy extremely difficult to him. As a student he applied for and was granted extra time in all his written examinations. One of his last actions, typical of his consideration for others, before entering hospital to undergo a serious operation, was to leave a list of friends who were to be advised, only when he was well enough, that he was convalescent in hospital and allowed to see visitors. Unfortunately an unforeseen and unavoidable condition developed after the operation and proved fatal.

By his passing we have lost a wise counsellor, loyal colleague, and a valued friend.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Kendall, Richard Bruce, M.B., B.S., 1942 (Univ. Sydney), Balmain District Hospital, Balmain.

Hall Johnston, Doreen Olive (registered as Moore), M.B., B.S., 1938 (Univ. Sydney), "Tannabah", Gilbert Park, Manly.

Medical Appointments.

Dr. George William Patterson has been appointed a Public Vaccinator for Victoria.

Dr. Edward Joseph Ryan and Dr. Edward Joseph Kahn have, in pursuance of the provisions of *The Workers' Compensation (Lead Poisoning, Mount Isa) Act of 1933*, been appointed Members of the Medical Board constituted by that Act; such appointments to take effect as from September 1, 1942.

Books Received.

"Synopsis of Blood Diseases", by A. Piney, M.D., M.R.C.P.; 1942. London: William Heinemann, Medical Books, Limited. Demy 8vo, pp. 132 with 4 coloured plates. Price: 10s. 6d. net.

"The Crisis of Our Age: The Social and Cultural Outlook", by Pitirim A. Sorokin; 1941. Sydney: Angus and Robertson Limited. Demy 8vo, pp. 280, with diagrams and charts. Price: 9s. 6d. net.

"Diseases of the Heart Described for Practitioners and Students", by Sir Thomas Lewis, C.B.E., F.R.S., M.D., D.Sc., LL.D., F.R.C.P.; Third Edition; 1942. London: Macmillan and Company, Limited. Medium 8vo, pp. 320 with 45 illustrations. Price: 15s. net.

"Handbook of Medicine for Final Year Students", by G. F. Walker, M.D. (Leeds), M.R.C.P. (London); Second Edition; 1942. London: Sylviro Publications Limited. Crown 8vo, pp. 320.

"Chronic Pulmonary Disease in South Wales Coalminers: I. Medical Studies", Medical Research Council; 1942. London: His Majesty's Stationery Office. Royal 8vo, pp. 236 with illustrations. Price: 10s. 6d. net.

Diary for the Month.

SEPT. 1.—New South Wales Branch, B.M.A.: Organization and Science Committee.
SEPT. 2.—Western Australian Branch, B.M.A.: Council.
SEPT. 3.—New South Wales Branch, B.M.A.: Special Groups Committee.
SEPT. 3.—South Australian Branch, B.M.A.: Council.
SEPT. 4.—Queensland Branch, B.M.A.: Branch — Jackson Lecture.
SEPT. 8.—Tasmanian Branch, B.M.A.: Branch.
SEPT. 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
SEPT. 11.—Queensland Branch, B.M.A.: Council.
SEPT. 15.—New South Wales Branch, B.M.A.: Ethics Committee.
SEPT. 16.—Western Australian Branch, B.M.A.: Branch.
SEPT. 17.—New South Wales Branch, B.M.A.: Clinical Meeting.
SEPT. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility unless such a notification is received within one month.

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